TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1909.

No. 169.

MARX, FOOS & COMPANY, PETITIONER,

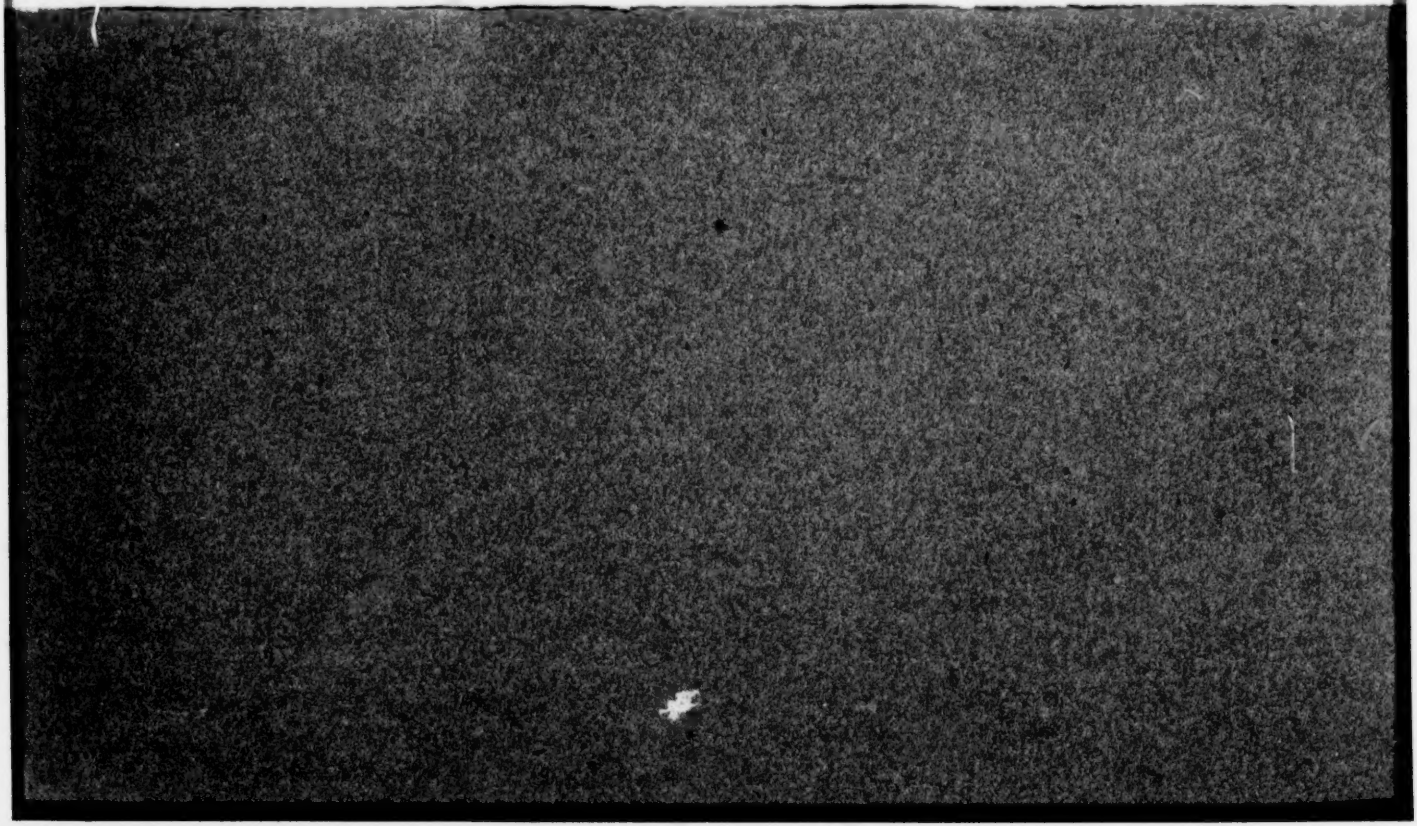
vs.

STOVER MANUFACTURING COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

PETITION FOR CERTIORARI FILED OCTOBER 16, 1909.
CERTIORARI AND RETURN FILED OCTOBER 25, 1909.

(17,015.)



(17,015.)

SUPREME COURT OF THE UNITED STATES.

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No. 149.

MAST, FOOS & COMPANY, PETITIONER,

vs.

STOVER MANUFACTURING COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

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In the United States Circuit Court of Appeals for the Seventh Circuit, October Term, A. D. 1897.

STOVER MANUFACTURING COMPANY, Appellant,
vs.
MAST, FOOS AND COMPANY, Appellee. } No. 486.

Vol. I.

Mr. L. L. Morrison, Mr. C. K. Offield, Mr. H. S. Towle, Mr. C. C. Linthicum, counsel for appellant; Mr. H. A. Toulmin, Mr. Lysander Hill, counsel for appellee.

Appeal from the circuit court of the United States for the northern district of Illinois.

Transcript of record filed March 2, 1898.
Printed record filed Apr. 2, 1898.
OLIVER T. MORTON, *Clerk.*

1 Pleas in the circuit court of the United States for the northern district of Illinois, northern division, in chancery sitting, at the United States court-room, in the city of Chicago, in said district and division, before the Honorable Peter S. Grosscup, district judge of the United States for the northern district of Illinois, on Wednesday, the 2d day of February, in the year of our Lord one thousand eight hundred and ninety-eight, and of the December term of said court, 1897, of our Independence the one hundred and twenty-second year.

S. W. BURNHAM, *Clerk.*

2 MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } 24697. In Chancery.

Be it remembered that on this day, to wit, the 19th day of November, 1897, came the complainant in said-entitled cause by its solicitor and filed in the clerk's office of said court its bill of complaint and bond for costs, which said bill and bond are respectively in the words and figures following, to wit:

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
STOVER MFG. COMPANY, Respondent. } In Equity.

Bill of Complaint.

Bill of complaint. Filed Nov. 19, 1897.

To the judges of the circuit court of the United States for the northern district of Illinois:

The Mast, Foos & Company, a corporation organized and doing business under the laws of the State of Ohio, a citizen of said State, and having its principal place of business in Springfield, Clark county, in said State, brings this, its bill, into this court against the Stover Manufacturing Company, a corporation organized and doing business under the laws of the State of Illinois, a citizen of said State, and having its principal place of business at Freeport, Stephenson county, in said State of Illinois.

1. Thereupon your orator complains and says, on information and belief, that Samuel W. Martin, of Springfield, Ohio, heretofore and at the time of his application for the hereinafter-mentioned letters patent, was a citizen of the United States, and was the true, original and first inventor of a certain new and useful apparatus, fully described in the specification of the letters patent, hereinafter mentioned, and named therein an improvement on wind-
3 mills, which was not known or used in this country, and not patented and described in any printed publication in this or in any foreign country before his invention thereof, and was not in public use or on sale more than two years prior to his application for letters patent of the United States therefor.

2. Your orator further shows unto your honors, on information and belief, that on the 5th day of August, 1890, letters patent of the United States, No. 433,531, for said invention, in due form of law, were, on the application of the said Samuel W. Martin, issued and delivered to your orator, in the name of the United States of America, and under the seal of the Patent Office of the United States, and were signed by the Secretary of the Interior of the United States, and countersigned by the Commissioner of Patents; and that the said letters patent did grant to your orator, its successors and assigns, for the term of seventeen years, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof, as will more fully and at large appear by said letters patent or a certified copy thereof in court to be produced, and attached hereto as Exhibit A.

3. Your orator further shows, on information and belief, that the said defendant, on and after the 5th day of August, 1890, and up to the time of the commencement of this action, and during and within the term of seventeen years mentioned in said letters patent,

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unlawfully, wrongfully and injuriously, and with intent to derive profits from making using and selling such apparatus, and to deprive your orator of the gains and profits which it might and otherwise would have derived from the sale of specimens of said apparatus, and without the license of your orator and against the will of your orator, did make, and did use, and did sell, and did cause to be made, and did cause to be used and did cause to be sold, sundry specimens of said apparatus, and of machines which contained and employed the invention covered by the said letters patent No. 433,531, as set forth in the first claim thereof, in infringement of said exclusive rights secured to your orator by said letters patent; and is now and at this time still engaged in making using and selling such infringing windmills, but how many such specimens the defendant has so made, used and sold, or caused to be made, used and sold, your orator is ignorant and cannot set forth; but your orator avers, on information and belief, that the defendant so made, used and sold, and caused to be made, used and sold, and still is making, using and selling, a large number thereof,
4 and that it has derived and is now deriving large profits therefrom, but to what amount your orator is ignorant and cannot set forth; and that your orator has been and is now being deprived of large gains and profits by reason of the aforesaid infringement by the defendant, and has thus incurred and is now incurring large damages thereby.

4. Your orator further shows that it has caused notice to be given said defendant of its infringements of said letters patent, but that it has been unable to prevail upon said defendant to discontinue in said infringement and to make recompense and satisfaction to your orator in consequence thereof; but instead that the said defendant has procrastinated, evaded and failed utterly to respect your orator's rights under said patent, and still makes, uses and sells such infringing windmills.

5. Your orator further shows that it has been and is now engaged in the extensive manufacture and sale of windmills, embodying and containing the improvements covered and secured by said letters patent, and has expended large sums of money, much time and labor, in said enterprise, and that the same has become of great and increasing value to your orator, and of material service and utility to the public, and that such windmills are now in extensive use throughout the United States.

6. Your orator further shows that it fears, and has reason to fear, that unless the defendant is restrained by a writ of injunction issuing out of this court it will continue to make use of and sell numbers of specimens of said infringing apparatus, and thereby will cause irreparable injury to your orator's aforesaid exclusive rights.

7. Your orator further shows that the validity of the said letters patent has, to the best of its information and belief, been acquiesced in by that part of the public adversely interested, except in the case of a small number out of the whole number of windmill manufacturers in the United States.

8. Your orator further shows that the validity of said letters

patent No. 433,531 has heretofore been uniformly affirmed, after strenuous litigation, by decrees in equity, in the United States circuit court for the district of Nebraska, and in the United States circuit court of appeals for the eighth circuit, namely, first, in the
5 suit of this complainant against N. S. Spencer, doing business as Spencer Manufacturing Company, by a decree taken for complainant on or about the — day of ——, 1893, as shown by the records of said circuit court, the decree being *pro confesso*, as the defendant, after the suit was instituted, acquiesced in the validity of the patent; second, in the suit of this complainant against the Dempster Mill Manufacturing Company, of Beatrice, Nebraska, a corporation organized under the laws of the State of Nebraska, the bill of complaint in which was filed on the second of October, 1894; the opinion in which was filed January 14, 1896, by his honor, Judge Shuras, after a regular hearing on the pleadings and proofs, and which decision (it being upon a point of alleged abandonment of the invention not involved in any issue made in the cause), was duly appealed from by the complainant, The Mast, Foos Company, to the United States circuit court of appeals for the eighth circuit, and the cause docketed at the May term, 1896, and numbered 799; and which appeal was duly heard by said circuit court of appeals on the proper transcript, issued out of said circuit court, in December, 1896, and an opinion filed Aug. 2, 1897, reversing the lower court on said question not raised by the issues, and sustaining the first claim of said letters patent and the charge of infringement, and awarding a decree for a perpetual injunction and an accounting; and that a mandate issued, pursuant to said opinion of August 2, 1897, by said circuit court of appeals, on the 4th day of November, 1897, and that a decree was duly entered on the — day of November, 1897, in said circuit court of Nebraska, in obedience to the provisions of said mandate; a copy of which opinion of August 2, 1897, by the said circuit court of appeals is hereto attached and marked "Exhibit B;" and a copy of which mandate is hereto attached and marked "Exhibit C," and a copy of which decree is also hereto attached and marked "Exhibit D," whereupon your orator avers, as aforesaid, that said letters patent No. 433,531 have been, as to the first claim thereof, sustained after strenuous litigation, said defendants, The Dempster Mill Manufacturing Company, having a stubborn resistance, employed counsel, been assisted by outside counsel, taken much testimony, set up the defenses of anticipation, no invention, prior use and non-infringement and presented the prior art as it relates to windmills and many other subjects alleged to be analogous thereto; notwithstanding all which, said patent has been so sustained.

9. Your orator further shows that The Stover Manufacturing Company, the defendant herein, participated in the manage-
6 ment of, and took an active part in, the defense in said cause by this complainant against said Dempster Mill Manufacturing Company, first by conferring and advising with said defendant and then by furnishing counsel who took an active part in managing the defense, namely, by participating in the taking of testimony

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and examining and cross-examining witnesses, by preparing and filing a brief and appearing and making an oral argument at the trial in said circuit court, and by again filing a brief and appearing and making an oral argument at the hearing in said circuit court of appeals, and that the defendant herein took such part in the management and defense of said case because if said Dempster Mill Manufacturing Company was infringing, and if said patent was valid, then said Stover Manufacturing Company, being engaged in making and selling similar windmills, would be likewise liable to your orator; and that these facts appear in the record of said case of this complainant against said Dempster Mill Manufacturing Company, as is more fully shown by a copy of the deposition of C. B. Dempster, the president of the Dempster Mill Manufacturing Company, which deposition was given in said cause, said copy being attached hereto and marked "Exhibit E;" whereupon your orator avers that the defendant herein is, in legal effect, bound by the proceedings in said cause of this complainant against said Dempster Mill Manufacturing Company, and is estopped by the same from denying the validity of the first claim of said patent, and from denying the infringement herein charged, because the windmill herein, as your orator avers, is of the same form and arrangement as the infringing windmill of the Dempster Mill Manufacturing Company in said other cause, and your orator prays the court to make effective said decision of said circuit court of appeals and said decree pursuant thereto (being made out of this jurisdiction), against this defendant.

10. Your orator prays your honors to grant unto it a preliminary and also a permanent writ of injunction, issuing out of and under the seal of this honorable court, directed to The Stover Manufacturing Company, the defendant herein, and strictly enjoining it and its officers, agents and employés not to make, use or sell, nor cause to be made, or used, or sold, any machine or apparatus containing or employing the invention covered and secured by said letters patent.

11. Your orator further prays that the defendant by a decree of this court may be compelled to account for and pay over to
7 your orator all the profits which the defendant has derived or shall have derived from any making, using or selling or making or using or selling of any specimen of the apparatus covered and secured by said letters patent; and that the defendant be decreed to pay all the damages which your orator has incurred or shall have incurred on account of the defendant's infringement of said letters patent; and that the court assess the damages at treble the amount that may be proved as in such cases provided by statute in view of the willful infringement by defendant after notice and in view of the facts hereinbelow recited; and also that the defendant be decreed to pay the costs of this suit, and that your orator may have such further and other relief as the equity of the case or the statutes of the United States may require and to this court may seem just.

To the end therefore that the defendant may if it can show why

your orator should not have the relief hereby prayed and may, according to the best and utmost of the knowledge, remembrance, information and belief of its proper officer, though not under oath, which is hereby waived, full, true, direct and perfect answer make to the several allegations of this bill as fully and specifically as if severally interrogated as to them respectively.

May it please your honors to grant unto your orator a writ of *subpœna ad respondendum*, issuing out of and under the seal of this honorable court, and directed to the Stover Manufacturing Company, and commanding it to appear and to make answer to this bill of complaint, if any it can, and to perform and abide by such order and decree herein as to this court shall seem just, and your orator will ever pray.

THE MAST, FOOS & COMPANY,
(Signed) By CHAS. K. RODGERS, *Sec'y.*

H. A. TOULMIN,
Solicitor and of Counsel for Complainant.

STATE OF OHIO, }
County of Clark, } *ss:*

On this 9th day of November, 1897, before me personally appeared Charles K. Rodgers, and made oath that he had read the foregoing bill subscribed by him and knows the contents
8 thereof, and that the same is true of his own knowledge, except as to matters which are therein stated to be based on information and belief, and that as to these matters he believes it to be true.

(Signed) GEO. ARTHUR,
Notary Public, Clark County, Ohio.

(Endorsed:) Filed November 19, 1897. S. W. Burnham, clerk.

"EXHIBIT A."

EXHIBIT A. Filed Nov. 19, 1897.

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & Co. }
vs. } In Equity.
STOVER MANUFACTURING Co. }

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters patent granted the Mast, Foos & Company, August 5, 1890, number 433,531, for improvement of windmills.

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In testimony whereof, I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of Washington, this 3d day of November, in the year of our Lord one thousand eight hundred and ninety-seven, and of the Independence of the United States of America the one hundred and twenty-second.

[SEAL.]

A. P. GREELEY,
Acting Commissioner of Patents.

No. 433,531.

The United States of America to all to whom these presents shall come:

Whereas, Samuel W. Martin, of Springfield, Ohio, has presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in windmills. He having assigned his right, title and interest in said improvement to the Mast, Foos & Company, of same place, a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and,

9–14

Whereas, upon due examination made the said claimant is adjudged to be justly entitled to a patent under the law.

Now, therefore, these letters patent are to grant unto the said The Mast, Foos & Company, its successors or assigns, for the term of seventeen years from the 5th day of August, one thousand eight hundred and ninety, the exclusive right to make, use and vend the said invention throughout the United States and the territories thereof.

In testimony whereof, I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the city of Washington, this 5th day of August, in the year of our Lord one thousand eight hundred and ninety, and of the Independence of the United States of America the one hundred and fifteenth.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

ROBERT J. FISHER,
Acting Commissioner of Patents.

15 EXHIBIT C.

EXHIBIT C. Filed Nov. 19, 1897.

United States Circuit Court of Appeals, Eighth Circuit, May Term, A. D. 1897.

MAST, FOOS & COMPANY, Appellant, *vs.* DEMPSTER MILL MANUFACTURING Company, Appellee. } No. 799. Appeal from the Circuit Court of the United States for the District of Nebraska.

Mr. H. A. Toulmin for appellant.
Mr. H. W. Pennock and Mr. L. L. Morrison for appellee.

Before Caldwell, Sanborn and Thayer, circuit judges.

Statement.

This is an appeal from a decree which dismissed a bill brought by Mast, Foos & Co., a corporation, for the infringement by the appellee, The Dempster Mill Manufacturing Company, a corporation, of letters patent No. 433,531, issued on August 5, 1890, to the appellant, as the assignee of Samuel W. Martin, for improvements in windmills. Here are copies of the drawings and specifications of this patent:

The first claim of this patent is the only one that is now said to be infringed by the appellee. The infringing device may be described from Martin's drawings. Discard Martin's triangular pitman D, carry his pump rod O to the left until it stands in the same vertical plane as the shaft K, straighten the pitman bar E, swing its right end downward and pivot it directly to the pump rod O, and we have the device used by the appellee. The defenses were that there was no novelty or utility in the combination of the appellant and that the appellee did not infringe it. In support of these defenses the mill company introduced in evidence letters patent No. 182,394, dated September 19, 1876, to Edward Williams, for a new and
16 improved windmill which shows the pitman for driving the pump rod actuated by two eccentric external-toothed gear wheels, so that the wind wheel will have an increased leverage, and on the upstroke of the pump rod will draw it slowly, while it will return more quickly upon the downstroke. This was the only patent on a windmill offered as anticipating Martin's invention. A number of other letters patent were introduced from which it appears that internal-toothed gearing had been used, long before Martin made his invention, to drive pinions which actuated woodsaws, cutters of harvesting and mowing machines, and like parts of similar machinery.

One witness testified that a windmill whose pump rod was driven by an external-toothed pitman and an internal-toothed spur gear was con-tructed and operated by the Spencer Manufacturing Com-

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pany, at Blue Springs, Nebraska, about November 1, 1889, but convincing evidence was produced by the appellant that Martin's first mill was constructed and sold as early as July, 1889.

SANBORN, J., after stating the case as above, delivered the opinion of the court:

The court below dismissed the bill in this case on the ground that the statement contained in the letters patent upon which this suit is based, that "the invention is in practical operation and on the market in considerable numbers, and the facts here stated with regard to its operation are such as have been ascertained from commercial experience with it," proved that the applicant had abandoned the invention.

The acts of Congress provide that one who has invented and discovered a new and useful improvement "not in public use or on sale for more than two years prior to his application unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceedings had, obtain a patent thereof." 16 Stat., ch. 230, sec. 24, p. 201; Revised Statutes, sec. 4886. The issue of the patent is, therefore, *prima facie* evidence that the invention it protects was not in public use or on sale for more than two years prior to the filing of the application on which it is based, and that it was not proved to be abandoned. The utmost effect of the recital in the patent which we have quoted could not carry it farther than to show that within two years prior to
17 the application the improvements described in it had been used and sold. But the use and sale of the invention within two years before the application for the patent was filed was not sufficient to establish an abandonment of the invention, because the act of Congress expressly authorizes the issue of a patent, notwithstanding such use and sale. An abandonment may undoubtedly be proved within two years prior to the filing of the application, but it ought not to be presumed, and it should be established by convincing evidence of the intention of the owner of the invention to dedicate it to the public. An abandonment is a dedication, and, like any other dedication, it should be clearly proved. It rests upon the intention of the inventor. If he expressly declares, or by his acts clearly shows his intention to dedicate his invention to the public, a finding of abandonment would be warranted. But such a dedication should be not lightly presumed, because it surrenders a vested right of property as much as the dedication of land for a public park or a public road. The evidence in this case does not satisfy us that the appellant, or the inventor Martin, its assignor, ever had any intention to dedicate this improvement to the public. Under the acts of Congress, they were authorized to use and sell the invention for two years and to apply for and receive their patent, so that their failure to apply during that time was not inconsistent with an intention to preserve and protect their rights. There is no evidence in the record of a use or sale of the invention more than two years before the application was made; there is no evidence of an express declaration that the inventor or the appellant would

not, or did not intend to, apply for a patent for it, and there is no evidence of any acts inconsistent with such an intention. On the other hand, the application for the patent within two years after the invention was made was presumptive evidence of an intention not to dedicate it to the public, and the issue of the patent was *prima facie* proof that it had not been abandoned. Moreover, the defense of abandonment was not pleaded and the appellant had no opportunity to meet it by evidence. It was discovered by the court below at the final hearing, and it rested on the statement in the patent which we have quoted, and on that alone. That statement was insufficient to support it. Mere forbearance to apply for a patent until one has perfected his invention and tested it by actual practice affords no just grounds to presume its abandonment, nor will the use or sale of it within two years before the application is filed, afford such ground, unless such sale or use is accompanied by other acts or by declarations which clearly evidence an intention to
18 dedicate the improvement to the public. Agawam Company *v.* Jordan, 7 Wall., 583, 607; Adams *v.* Jones, 1 Fed. Cas., 126, 127, No. 57; Babcock *v.* Degener, 2 Fed. Cas., 293, 297, No. 698; Jones *v.* Sewall, 13 Fed. Cas., 1017, 1027, No. 7495; McMillin *v.* Barclay, 16 Fed. Cas., 302, 306, No. 8902; Pitts *v.* Edmonds, 19 Fed. Cas., 751, 757, No. 11191.

In considering the merits of the case, the defenses of prior use and no utility may be dismissed without extended consideration. All the witnesses on both sides of the case testify that the combination of the internal-toothed spur wheel with the pinion and the other usual machinery of a windmill and pump is more useful and more valuable than any other combination of elements in a windmill and pump yet discovered. The evidence of prior use is the testimony of a single witness, who was once in the employ of another infringer of the device of the appellant, but has since been employed by the appellee. He produces no part of the old windmill which he testifies was set up and put in operation before Martin filed his application, and his evidence is without the support of any patents or exhibits and without the support of the testimony of any other witness. The unsupported oral testimony which will warrant a finding of prior use should be clear and satisfactory. It is always open to suspicion. It ought to be sufficient to establish such a use beyond a reasonable doubt. The Barbed Wire patent, 143 U. S., 275; Deering *v.* Winona Harvester Works, 155 U. S., 286, 300. The testimony for the appellee on this issue is not of this character, and it will be dismissed without further comment.

But the appellee denies infringement. The essential element of the combination which their inventor sought to protect by the first claim of the patent in suit was the internal-toothed spur wheel or spur gear meshing with and driving the pinion which actuated the pitman and pump rod. Prior to his invention, all windmills had been driven by the external-toothed spur wheels. As the cog on the spur wheel and pinion and the other parts of the machinery wore away, the spur wheel and the pinion drew apart, and as the pitman connection passed over the center and the motion changed

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from a pulling to a pushing one, or *vice versa*, a pounding and racking of the machinery arose which shortened its life and sometimes stripped the cogs from the pinion. The object of Martin's invention was to do away with this pounding, and to prevent this gear and strain of the machinery. He accomplished this by throwing aside the external-toothed
19 spur gear and combining an internal-toothed spur gear with the pinion and the other necessary elements of the windmill, so that, as he says, "a plurality of the pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear." The evidence is undisputed that this invention completely accomplished its purpose. In the year 1893 or 1894, the appellee discarded the external-toothed spur gear, with which it had previously driven its windmills, and substituted in its mills the internal-toothed spur wheel described and claimed by Martin. The record discloses the fact that the president of the appellee had previously seen one of the mills of the appellant in operation and that he was advised to make this change by his pattern-maker, who had been in the employ of an infringer upon the appellant, against whom it had procured a decree, because the pattern-maker thought that the internal-toothed wheel was a good thing. The appellee seeks to escape from the inevitable conclusion to which these facts lead on the plea that it does not use the pinion bar, the wrist pin or the pivoted pitman described in the specification and in the second and third claims of Martin's patent. Its counsel invokes the principle that there can be no infringement of a combination, if any element of the combination is absent of the pivoted pitman and of the pitman bar is fatal to the appellant's claim of infringement. The answer is, that this invention consists essentially, as the inventor declares at the beginning of his specification, in the combination of the internal-toothed spur gear with any suitable pinion, wind shaft, wrist pin, pitman and pump rod of a windmill, and that he has broadly claimed this combination in the first claim of his patent.

That claim is: "1. The combination with a windmill driving shaft and a pinion thereon, of an internal-toothed spur wheel mounted adjacent to the said shaft and meshing with said pinion, a pitman connected with the spur wheel, and an actuating rod connected with the pitman." There is not an element in this combination which is not found in the windmill of the appellee, and it cannot be permitted to read other elements into this claim and then defeat it because it does not use the elements it interpolates. The pitman bar and the pivoted pitman were omitted from this claim, we think, for the express purpose of securing the essential element of
20 the invention in combination with any pinion, pitman and pump rod that might be used. In our opinion the special office of the second and third claims was to secure combinations containing the pivoted pitman and the pitman rod described in the

specification and omitted from the first claim, and the fact that these claims were added is a very persuasive argument that the additional elements they protect were not secured by the first claim. Any construction which would read into the first claim these additional elements renders it useless and unmeaning, because it gives it the same effect as the claims which follow it, and in this way shows that neither the patentee nor the Patent Office contemplated such an interpretation. The appellee has appropriated the essential feature of this invention, *and* the internal-toothed spur gear in combination with the pinion, pitman, wind shaft and pump rod of a windmill. The terms of the first claim are plain and unambiguous. They need no construction, and when taken in their ordinary signification they fully describe and clearly claim the combination which the appellee is using. It ought not to escape here because it does not use subordinate or unimportant elements of combinations described in other claims, which were undoubtedly omitted from this claim that the inventor might more perfectly secure the essential element of his invention. Cohansy Glass Manufacturing Co. *v.* Wharton, 28 Fed. Rep., 189, 190; Tondeur *v.* Stewart, 28 Fed. Rep., 561, 564; Gould Coupler Co. *v.* Pratt, 70 Fed. Rep., 622, 629.

Finally, the counsel for the appellee argue that there is no patentable novelty in the combination described in this claim, because internal toothed spur wheels were old and well known and the substitution of them for external-toothed spur gear in the machinery of windmills was nothing but a double use. This argument is always plausible and persuasive where old elements have been combined to produce a new or better result. Each element taken by itself has its old effect and it is always difficult to understand how it was that the practiced eyes of a skillful mechanic did not at once see and apply the necessary remedy to the troublesome evil which the invention removes. The fact, however, that such an evil long existed and that no mechanic perceived or applied the remedy is the most conclusive evidence that something more than his eyes and skill was required to discover and apply the requisite device. It is true that internal-toothed spur wheels have been familiar to mechanics time out of mind. They had been used on mowing machines and harvesting machines, on machines for sawing
21 wood, and doubtless upon hundreds of other machines, but no one had ever combined one of these internal-toothed wheels with the pinion, pitman and pump of a windmill until Martin made his invention in the year 1889. Windmills were old and their operation was familiar to mechanics, but until that year they went on pounding their wheels with every stroke of the pump rod, wearing themselves out prematurely and occasionally stripping their pinions of cogs for the lack of the combination of this internal-toothed spur wheel with the other essential elements of their machinery. If naught but the skill of the mechanic was required to make this improvement, it is passing strange that no mechanic ever made it until after Martin discovered and described it. In Western Electric Co. *v.* La Rue, 139 U. S., 601, the Supreme Court

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sustained a patent to one who took a torsional spring, such as had been used in clocks, doors and other articles of domestic furniture, and applied it to telegraph instruments. In Crane *v.* Price, Webster's Pat. Cas., 409, the use of anthracite coal where bituminous coal had been previously used for smelting iron was held to be an invention, because it produced better iron at less expense. It is not infrequently a difficult—a delicate task to determine whether or not the application for an old device to the production of a new or better result rises to the dignity of an invention. Mr. Justice Brown says in Potts *v.* Creager, 155 U. S., 597, 608, that the result of the authorities upon this subject is that "if the new use be so nearly analogous to the former one that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use; but if the relations between them be remote, and especially if the use of the old device produce a new result, it may at least involve an exercise of the inventive faculty." The best evidence that the application of the internal-toothed spur wheel to the new use of propelling the machinery of a windmill would not occur to a person of ordinary mechanical skill is that it did not occur to any of them in all the years in which windmills had been in use before Martin discovered and applied it. Thomson *v.* Citizens' National Bank, 10 U. S. App., 500, 512, 513; 3 C. C. A., 518, 522, 523; 53 Fed. Rep., 250, 255; Loom Co. *v.* Higgins, 105 U. S., 580, 591; Consolidated Safety Valve Co. *v.* Crosby Steam Gauge & Valve Co., 113 U. S., 157, 179; Magowan *v.* New York Belting & Packing Company, 141 U. S., 332, 341, 342; the Barbed Wire patent, 143 U. S., 275, 281, 283.

Moreover, the combination of Martin immediately went
22 into general use. More than three thousand windmills which contained his combination have been manufactured and sold since 1890. All the witnesses testify to its advantages over the old combination which contained the external-toothed gear, and the fact that the appellee discarded the latter and substituted the former demonstrates its utility and its advantage. Where the question of novelty is in doubt, the fact that the device has gone into general use and has displaced other devices previously employed for a similar purpose is sufficient to turn the scale in favor of the invention. Potts *v.* Creager, 155 U. S., 597, 609; Smith *v.* Goodyear Dental Vulcanite Co., 93 U. S., 486; McGowan *v.* New York Belting & Packing Co., 141 U. S., 332, 341, 342; the Barbed — patent, 143 U. S., 275, 281, 283.

The probative force of the patent and of the facts to which we have adverted constrain us to hold that the combination described in its first claim rose to the dignity of an invention and was properly secured by the patent. The decree below must be reversed with costs and the case must be remanded to the court below, with directions to enter a decree to the effect that the first claim of the patent is valid and is infringed by the appellee; that the latter be enjoined from making, using or selling any machine containing the combination described in the claim, and that it account for the

profits which it had derived from the manufacture and sale of any such machines, and it is so ordered.

Filed August 2, 1897.
A true copy.
Attest: ——— ———,
Clerk U. S. Circuit Court of Appeals, Eighth Circuit.

EXHIBIT D.

EXHIBIT D. Filed Nov. 19, 1897.

UNITED STATES OF AMERICA, *ss:*

The President of the United States of America to the honorable the judges of the circuit court of the United States for the district of Nebraska, Greeting:

Whereas lately, in the circuit court of the United States for the district of Nebraska, before you or some of you, in a cause between Mast, Foos & Co., complainant, and Dempster Mill Manu-
23 facturing Company, defendant, wherein the decree of the said circuit court in said cause, entered on the 14th day of January, A. D. 1896, is in the following words, viz:

"Now, on this 14th day of January, 1896, this cause having been brought to a final hearing upon the pleadings and proofs on the 11th day of January, 1896, and counsel for the respective parties having been heard, and the cause having been considered by the court, it is found and hereby ordered, adjudged and decreed that the letters patent of the United States No. 433,531, dated August 5, 1890, issued upon the application of Samuel W. Martin to the complainant herein, Mast, Foos & Co., for improvements in windmills, is null and void, and that the bill of complaint be dismissed.
(Signed) O. P. SHIRAS, *Judge.*"

as by the inspection of the transcript of the record of the said circuit court, which was brought into the United States circuit court of appeals for the eighth circuit, by virtue of an appeal agreeably to the act of Congress, in such case made and provided, fully and at large appears.

And whereas, in the present term of May, in the year of our Lord one thousand eight hundred and ninety-seven, the said cause came on to be heard before the said United States circuit court of appeals, on the transcript of record from said circuit court, and was argued by counsel.

On consideration whereof, it is now here ordered, adjudged and decreed by this court that the decree of the said circuit court in this cause be, and the same is hereby, reversed with costs; and that Mast, Foos & Co. have and recover against the Dempster Mill Manufacturing Company the sum of one hundred three and fifteen one-hundredths dollars for its costs in this behalf expended, and have execution therefor.

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It is further ordered that this cause be and the same is hereby remanded to the said circuit court, with directions to enter a decree to the effect that the first claim of the patent is valid and is infringed by the appellee, Dempster Mill Manufacturing Company, and the latter be enjoined from making, using or selling any machine containing the combination described in that claim, and that it account for the profits which it has derived from the manufacture and sale of any such machines.

24 AUGUST 2, 1897.

You, therefore, are hereby commanded that such execution and further proceedings be had in said cause, in conformity with the opinion and decree of the court, as according to right and justice, and the laws of the United States, ought to be had, the said appeal notwithstanding.

Witness, the Honorable Melville W. Fuller, Chief Justice of the Supreme Court of the United States, the fourth day of November, in the year of our Lord one thousand eight hundred and ninety-seven.

JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals,
Eighth Circuit.

Costs of Appellants.

Clerk	$33 15
Printing record	50 00
Attorney	20 00
	$103 15

Endorsed: United States circuit court, northern district of Illinois. The Mast, Foos & Co. *v.* Stover Manufacturing Co. In equity. "Exhibit D."

Here follows Exhibit "E," not copied.

Bond for Costs.

Bond for costs. Filed Nov. 19, 1897.

UNITED STATES OF AMERICA,
Northern District of Illinois, Northern Division, } *ss:*

Circuit Court, October Term, A. D. 189–.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MANUFACTURING COMPANY, Defendant. } In Equity.

I enter myself as security for costs in this cause, and promise to pay all costs which may accrue to the opposite party in
25 this action, or to any of the officers of this court, and in default of payment by the complainant of any costs ordered or

adjudged to be paid by it hereby agree and stipulate that execution may issue against my property for all costs not exceeding two hundred dollars taxed against said complainant.

Dated this 19th day of November, A. D. 1897.

ANSON MARK,
Residence, 123 *La Salle Ave.*

Acknowledged before me this 19th day of Nov., 1897.

S. W. BURNHAM,
Clerk U. S. Circuit Court, Nor. Dist. Ill.

I, Anson Mark, a surety on the annexed bond, being duly sworn, depose and say that I am worth in personal property situate in the northern district of Illinois the sum of six hundred dollars, over and above my just debts and liabilities.

ANSON MARK.

Sworn to and subscribed before me this 19th day of Nov'r, 1897.

S. W. BURNHAM, *Clerk.*

(Endorsed:) Filed Nov. 19, 1897.

S. W. BURNHAM, *Clerk.*

26 On the same day, to wit, the 19th day of November, 1897, there was filed in the clerk's office of said court in said entitled cause the affidavit of W. H. Rayner, which said affidavit is in the words and figures following, to wit:

Affidavit of W. H. Rayner. Filed Nov. 19, 1897.

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of W. H. Rayner in support of motion for a preliminary injunction.

STATE OF OHIO,
County of Clark, } *ss:*

I, W. H. Rayner, being duly sworn, depose and say that I reside in Springfield, Ohio, and am manager of the windmill and pump department of Mast, Foos & Company, the complainant above named.

I further say that I am familiar with the windmills now being manufactured and sold by the Stover Manufacturing Company of Freeport, Illinois, known as their internal-gear windmill, and designated in the trade as their "Ideal windmill." This mill I have seen—that is, I have seen specimens of it, and I know the cut hereunto attached and marked "Exhibit Cut of Stover Mfg. Company's Internal Windmill Gear" is a correct representation of such mill.

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This mill is being manufactured and sold by said Stover Manufacturing Company in competition with and to the injury of the internal-gear windmill business, previously established, of Mast, Foos & Company. The continued manufacture and sale of this Stover internal-gear windmill is working and will continue to work loss of an irreparable character to the business of Mast, Foos & Company.

I am familiar with letters patent of the United States No. 433,531, issued August 5th, 1890, to Mast, Foos & Company. The
27 latter are and have for years past been making and selling their internal gear windmills under and in accordance with this patent. I have read the bill of complaint filed in this cause and know the contents thereof to be true, and that said letters patent have been sustained by the circuit court of appeals for the eighth circuit, after hard-fought and strenuous litigation, in a suit of Mast, Foos & Company *v.* The Dempster Mfg. Co, and I am also informed from the deposition of C. B. Dempster, the president of the Dempster Mill Mfg. Co., that the Stover Mfg. Co. employed counsel to assist the attorney for the Dempster Mfg. Co., in the name of the latter, in defending said suit after the Stover Mfg. Co. and the said C. B. Dempster had held a conference at Freeport, Illinois, the home of the Stover Mfg. Co., as to what policy to pursue in defending such suit. At that time the Stover Mfg. Co. was making their internal gear windmill in infringement of said patent, and they aided in such defense because they knew that if such patent was sustained they would become liable. So they furnished assistance in the defense and supplied their lawyers to defend, while they continued to sell the infringing windmill.

I have compared the first claim of said letters patent with this Stover internal-geared windmill and with the cut attached, and I have found in such windmills and in such cut the mechanism specified in said claims, arranged in the same or substantially the same way, and performing the same work by the same mode of operation. I further say that the Stover Manufacturing Company were notified and requested to desist in the infringement of such patent, but refused to do so; and that such company has heretofore injured and is now severely injuring the business of Mast, Foos & Company in respect to the windmills it makes and sells under said letters patent, and I respectfully show to the court that unless the Stover Manufacturing Company is enjoined and restrained this injury will become irreparable, and Mast, Foos & Company's said trade be more and more diverted and become more and more difficult to ever recover.

I further say that the windmill head marked "Complainant's Exhibit Complainant's Patented Windmill" is a true specimen of such windmill as the same is manufactured and sold by Mast, Foos & Company under said letters patent; and that the windmill marked "Complainant's Exhibit Stover Infringing Mill" is a
28 specimen of such Stover mills as the same are being manu-

factured and sold in infringement of said letters patent as stated above.

(Signed) W. H. RAYNER.

Sworn and subscribed to before me this 15th day of November, 1897.

(Signed) EDWIN L. ARTHUR,
Notary Public, Clark County, Ohio.

(Endorsed:) Filed November 19, 1897. S. W. Burnham, clerk.

On the same day, to wit, the nineteenth day of November, 1897, a writ of subpœna issued out of the clerk's office directed against the defendant in said entitled cause, which said writ, together with the memorandum thereto attached and the marshal's return thereon endorsed, is in the words and figures following, to wit:

Chancery Subpœna.

Subpœna. Issued No. 19, 1897.

UNITED STATES OF AMERICA,
Northern District of Illinois, Northern Division, } *ss:*

The United States of America to Stover Manufacturing Company, a corporation, Greeting:

We command you that you appear before our judges of our circuit court of the United States of America for the northern district of Illinois, at Chicago, in the northern division of said district, on the first Monday in the month of January next, to answer the bill of complaint of the Mast, Foos & Company, a corporation, this day filed in the clerk's office of said court, in said city of Chicago, then and there to receive and abide by such judgment and decree as shall then or thereafter be made, upon pain of judgment being pronounced against you by default.

To the marshal of the northern district of Illinois to execute.

Witness the Hon. Melville W. Fuller, Chief Justice of the United States of America, at Chicago aforesaid, this nineteenth day
29 of November, in the year of our Lord one thousand eight hundred and ninety-seven.

[SEAL.] S. W. BURNHAM, *Clerk.*

Memorandum.

The above-named defendant is notified that unless it shall enter its appearance in the clerk's office of said court, at Chicago aforesaid, on or before the day to which the above writ is returnable, the complainant's bill will be taken against it as confessed and a decree entered accordingly.

S. W. BURNHAM, *Clerk.*

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Marshal's Return.

Marshal's return. Filed Nov. 22, 1897.

UNITED STATES OF AMERICA,
Northern District of Illinois, Northern Division, } ss:

I have served the within writ within my district in the following manner, to wit: Upon the Stover Manufacturing Company, a corporation, therein named, by reading within the presence and hearing and delivering a true copy of the same to W. A. Merrifield, secretary and treasurer of the said corporation, this 19th day of November, A. D. 1897. At the same time I left with him a motion for a preliminary injunction, with affidavits attached thereto.

JOHN W. ARNOLD,
U. S. Marshal,
By H. C. WADE, *Deputy.*

(Endorsed:) Filed Nov. 22, 1897. S. W. Burnham, clerk.

30 Afterwards, to wit, on the twenty-second day of November, 1897, there was filed in the clerk's office of said court in said entitled cause a certain motion for preliminary injunction and affidavit of W. H. Rayner, in support of said motion, which said motion and affidavit are in words and figures following, to wit:

Motion and Affidavit.

Motion for preliminary injunction. Filed Nov. 22, 1897.

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MANUFACTURING COMPANY, Defendant.

Motion for preliminary injunction.

Now comes the complainant, through its solicitor, and moves this honorable court for a preliminary injunction restraining the respondent, its officers, employés and agents, from making, using or selling windmills such as described and set forth in the affidavit of W. H. Rayner, attached hereto, in support of this motion.

Please take notice that on the 29th day of November, 1897, at ten o'clock a. m., or as soon thereafter as counsel can be heard, the above motion will be called up for hearing in the court above designated, in the court-room or in chambers in the city of Chicago, Illinois.

(S'g'd) H. A. TOULMIN,
Solicitor for Complainant.

31 Afterwards, to wit, on the twenty-ninth day of November, 1897, there was filed in the clerk's office of said court, in said

entitled cause, the affidavit of W. A. Merrifield, which said affidavit is in words and figures following, to wit.

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
v.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of W. A. Merrifield.

Affidavit of W. A. Merrifield. Filed Nov. 29, 1897.

STATE OF ILLINOIS, } ss:
Stephenson County, }

W. A. Merrifield, being first duly sworn, on oath says:

I reside at Freeport, Illinois. I am secretary and treasurer of Stover Manufacturing Company, the defendant herein. I am, by virtue of my official connection with said defendant, perfectly informed as to its financial standing, and say that said defendant is financially responsible for over $200,000.

(Signed) W. A. MERRIFIELD.

Subscribed and sworn to before me this 29th day of November, A. D. 1897, at Freeport, Illinois.

(Signed) JAMES H. STEARNS,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Nov. 29, 1897. S. W. Burnham, clerk.

32 Afterwards, to wit, on the thirtieth day of November, in the July term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Order of November 30, 1897.

Order. Entered Nov. 20, 1897.

THE MAST, FOOS & COMPANY
vs.
THE STOVER MANUFACTURING COMPANY. } 24697.

It appearing to the court that the defendant has delivered to the clerk of this court a certified check on the State Bank of Freeport for the sum of two thousand dollars, as heretofore directed by the court, on the application of the defendant for a postponement of the hearing of the motion for a preliminary injunction, it is hereby ordered that such hearing be and the same is hereby postponed until the 6th day of December next, at eleven o'clock a. m., and that the clerk hold such moneys subject to the further order of the court, to indemnify the complainant for any damage it may sustain

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on account of the postponement of the hearing of said motion for a preliminary injunction as aforesaid.

Afterwards, to wit, on the sixth day of December, 1897, there was filed in the clerk's office of said court the affidavit of Irvine Miller, which said affidavit is in the words and figures following, to wit:

Affidavit of Irvine Miller. Filed Dec. 6, 1897.

In the United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY. } In Equity.

STATE OF ILLINOIS, }
County of Cook, } *ss:*

Irvine Miller, being first duly sworn, deposes and says: I am thirty-seven years of age and am by profession a solicitor of
33 patents and expert in patent cases, residing and doing business at Chicago, in the county of Cook, and State of Illinois. I was employed for three years in the United States Patent Office, and during the greater part of that time was a member of the examining corps and assistant examiner. Since 1884 I have resided at Chicago, and since that time I have been continuously engaged as a solicitor of patents and expert in patent cases. In the former capacity I have prepared and prosecuted a large number of applications for letters patent, and in the course of this branch of my profession I have been constantly engaged in the examination of mechanical drawings and the drawings and specifications of letters patent for the purpose of determining the nature of the constructions involved and in order to be enabled to understand the same and the mechanisms therein set forth, as well as for the purpose of comparing these mechanisms with each other and with existing structures for the purpose of determining their similarities and differences. I have also been frequently called upon to give my opinion- on questions of infringement and anticipation, the preparation of such opinions involving the understanding and comparison of the prior art and existing structures and patents. I have also been frequently called upon to testify as an expert witness in patent cases in the United States court, and the greater portion of my time for the last seven or eight years has been devoted to this line of work.

In the course of my employment as a solicitor of patents I have had occasion to investigate the subject of windmills at various times, and have repeatedly prepared and prosecuted applications for letters patent for apparatus of this character, and I have also been called upon to testify and have testified as an expert witness in patent litigation in relation to windmills.

I have examined and believe that I fully understand the United States letters patent No. 433,531, issued August 5th, 1890, to Sam-

uel W. Martin, assignor to the Mast, Foos & Company, for improvements in windmills. Upon examining this patent I find that, according to the statement of invention contained in the paragraph beginning at line eleven of page one of the specification, the invention is in no way limited to a windmill, but "consists essentially of an improved back-gear organization." The actual or essential invention is, therefore, according to the patentee, a different invention from that specified in the title, and is not limited in its application to a windmill. This view is borne out by the claims, for, although these latter contain an element, a "windmill driving
34 shaft," it is obvious that the invention, in so far as the other elements of the claim are concerned, would be in nowise modified if the driving shaft were that of a mechanism or apparatus other than a windmill.

The patentee states that his improved back-gear organization involves "an external-toothed pinion and an internal-toothed spur gear, the pinion being mounted on the wheel shaft and the gear having formed on or connected with it the wrist pin, to which the operating pitman is attached."

The purpose and object of the invention are said to be to prevent all pounding and lost motion as the pitman connection passes over the center, and changes from a pushing to a pulling action, and to reduce the speed of the main shaft as applied to the wrist pin.

The patentee states that these objects are accomplished "by the fact that a plurality of the pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod." The structure shown and described in the Martin patent, as embodying and constituting the invention, consists of a frame provided with an arm to which is pivoted a part called by the patentee a "pitman," indicated by the reference letter D in the specification and drawings. Of this the patentee says: "This pitman is triangular and of the type on the market in windmills manufactured by my assignees of this invention."

To one extremity of this pitman there is attached what the patentee terms a pitman bar E, and the other end of this pitman bar is fitted upon a wrist pin F, which is carried by a gear G provided with internal teeth.

This gear is mounted on a stud of the frame and is arranged to mesh with a pinion on the wind-wheel shaft. The actuating rod of the mill is attached or connected with the pitman D in an approved manner, and extends down from the tower to the appliances to be operated. This may be, according to the patentee, a pump or any other appliance.

The first claim of the patent in suit is as follows:

"1. The combination with a windmill driving shaft and a pinion thereon, of an internal-tooth spur wheel mounted adjacent to the said shaft and meshing with said pinion, a pitman connected with the spur wheel, and an actuating rod connected with the pitman."

I understand that the elements of this claim are as follows:

1. A shaft, meaning the wind-wheel shaft L of the patent.

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35 2. A pinion thereon, meaning thereby the pinion M of the patent.

3. An internal-toothed spur wheel, meaning thereby the gear G of the patent.

4. A pitman connected with the spur wheel, meaning thereby the pitman D of the patent.

5. An actuating rod connected with the pitman, meaning thereby the rod O of the patent.

As to the fourth element of this claim, to wit, the pitman, I am of the opinion that the patentee intends to indicate and does indicate the part marked D in the drawings of the patent, chiefly for the reason that throughout the specification and claims of the patent the word "pitman" is used solely for the purpose of designating this one part, that the term is applied to the said part and to no other part, and that whenever and wherever the part marked E in the drawings is referred to it is designated as the "pitman bar."

I am further confirmed in my understanding that, by the term "pitman" as employed in claim, only the part marked D in the drawings *in* indicated and not the part marked E, by a comparison of claim one of the patent with claim two thereof.

Claim 2 reads as follows:

"2. The combination, with a *m*indmill driving shaft and a pinion mounted thereon, of an internal-toothed spur wheel mounted adjacent to said shaft and meshing with said pinion, a pitman bar connected to the spur wheel, a pivoted pitman connected to the said bar, and an actuating rod connected to said pitman."

It will be observed that this second claim differs from the first claim in having therein, as an additional element, the pitman bar. It will also be observed that, in the statement of invention already quoted by me, the patentee states that "the gear has formed on or connected with it the wrist pin to which the operating pitman is attached." By this language I understand that the patentee in his first claim does not wish to limit himself, in so far as the connection between the pitman D and the gear wheel G is concerned, to the specific connection by means of a pitman bar shown in the drawings and described in the specification, but that he desires it understood that any suitable connection between the pitman bar D and the gear G will be within the scope of his first claim in so far as this element of the combination is concerned.

In the second claim, however, I understand that he desires to limit the combination, as to this feature thereof, to a connec-
36 tion which is established between the triangular pitman D and the gear G by means of a pitman bar E.

The third claim of the Martin patent is as follows:

"3. The combination, with the upper part of the windmill turntable, the main shaft mounted thereon, and a pitman pivoted thereon, an actuating rod carried by the pitman, and a pinion mounted on said shaft, of a shaft or stud adjacent to the main shaft, an internal spur gear mounted on said shaft or stud, and having a wrist pin, and a pitman bar connected to the wrist pin and to said pitman bar."

In connection with my examination of the patent in suit I have also examined and compared therewith a large number of letters patent of the United States anterior in date to said letters patent in suit, and I will first direct attention to certain of these older patents which illustrate the development of windmills from the simpler and earlier forms up to those existing at the time of the filing of the application upon which the Martin patent in suit is based.

In illustrating the development of the older art, I will refer for convenience to a series of sketches embodying the essential features of windmills of the several older types, which sketches are made exhibits attached to this deposition.

Referring first to the simplest form of mill, whereby the rotary motion of the windmill and its shaft is converted into a reciprocating motion of the actuating rod, this form is shown in "Defendant's Exhibit Sketch No. 1," wherein the windmill shaft is provided with a terminal, upon the crank pin of which the actuating rod is directly pivoted. Such a construction as is indicated in this sketch is shown in letters patent of the United States No. 233,928, granted Nov. 2, 1880, to G. C. Harris, for improvement in windmills.

It was found desirable, however, for the purpose of permitting the actuating rod to have a direct vertical movement without lateral motion, to interpose between the crank and connecting rod a connecting rod or pitman properly so called, and such a construction is shown in "Defendant's Exhibit Sketch No. 2," which is the type of mill set forth in U. S. letters patent No. 233,134, granted Oct. 12th, 1880, to G. M. Beard, for improvement in windmills.

As a still further development of mechanism intermediate between the crank on the windmill shaft and the actuating rod of the mill, it was found desirable to provide a guiding arm or link, corresponding with the part termed by the patentee Martin in the patent in suit a pitman, and this construction is found in its simpler
37 form in "Defendant's Exhibit Sketch No. 3," in which the actuating rod is connected to one end of the link, the other end of said link being pivoted to a supporting arm on the frame and the crank of the wind-wheel shaft being connected to said link and to the actuating rod. See patent No. 189,132, April 3rd, 1877, to D. Nysewander.

This structure is again found in a still further development form in "Defendant's Exhibit Sketch No. 4," which typifies and illustrates the construction of a windmill such as is found in "Defendant's Exhibit Mast-Foos Mill," and which I understand to be a mill made by the complainant herein, and which I also understand to be the mill referred to by the patentee in the sentence already quoted by me, beginning at line 43 of page 1 of the specification of his patent, as the windmill "manufactured by my assignees of this invention" and as "on the market."

It will be observed that this latter mill, shown in "Defendant's Exhibit Sketch No. 4," and embodied in "Defendant's Exhibit Mast-Foos Mill," is identical with the mill set forth in the Martin patent in suit, except that instead of having the pitman bar connected to an internal gear which meshes with a pinion on the

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windmill shaft, said pitman bar is connected directly to a crank wheel in said wind-wheel shaft.

It was found desirable under certain circumstances to reduce the speed of the actuating rod of the mill relatively to that of the wind-wheel shaft, so that each turn or rotation of the wind-wheel shaft, instead of producing a complete reciprocation of up-and-down motion of the actuating rod, as in the various mills typified in "Defendant's Exhibits Sketches Nos. 1 to 4," would produce only a partial reciprocation, and for this purpose these mills of various types were geared down, or in other words "back-geared." "Defendant's Exhibit Sketch No. 5" shows a typical illustration of a mill of the character shown in "Defendant's Exhibit Sketch No. 2," wherein there is interposed between the wind-wheel shaft and actuating rod a reducing gear constituted by a pinion on the wind-wheel shaft and a gear wheel meshing with said pinion and carrying the crank pin, to which the actuated rod is connected by a pitman. A mill of this type is found in letters patent No. 207,189, granted August 20, 1878, to S. W. Martin for improvement in wind wheels, the patentee being, I understand, the same S. W. Martin to whom the patent in suit was granted.

"Defendant's Exhibit Sketch No. 6" illustrates a mill of a type similar to those shown in "Defendant's Exhibits Sketches
38 No. 3 and No. 4," wherein gearing is interposed between the wind-wheel shaft and the actuating rod, for the purpose of varying the relative motion of these two elements. The construction typified is found in U. S. letters patent No. 182,394, granted Sept. 19, 1876, to E. Williams for improvements in windmills. It is true that the patent referred to illustrates gearing for the purpose of varying the speed or rate of motion of the actuating shaft at different portions of its stroke, but gearing for the purpose of back gearing or gearing down could be readily substituted therefor by any skilled mechanic.

The development of the prior art as shown in these several sketches just referred to show that it was old and well known prior to the date of filing of the Martin patent in suit, to connect the wind-wheel shaft to the actuating rod by various connecting mechanisms, which gave a single reciprocation of the rod for each revolution of the shaft, and among such mechanism that shown in sketch No. 4, and in the "Defendant's Exhibit Mast-Foos Mill," contain the exact structure set forth in the patent in suit, with the exception that there is no back gearing. The prior art also shows that back gearing of various types of mills for the purpose of giving a longer stroke to the actuating rod was old and well known, and the problem which Martin set for himself, as I understand it, was to back-gear the particular form of mill shown in "Defendant's Exhibit Sketch No. 4" and in "Defendant's Exhibit Mast-Foos Mill." The resulting construction is that shown in "Defendant's Exhibit Sketch No. 7," which is the construction of the patent. It will be seen that instead of employing external gearing for the purpose of gearing back this old Mast-Foos mill, the patentee employed external gear, and since both styles of gear, internal and external, were

old and well known long prior to the date of his application, and were known and considered to be practically interchangeable forms, either one of which might be used, according as circumstances might dictate, it is obvious in my opinion that in making his choice between these two available forms the patentee exercised nothing more than a right of selection based on adaptability, which did not in the slightest degree involve invention. In other words, he chose the well-known internal gear chiefly for the reason that, owing to its compactness, it fitted into the particular type of mill which he desired to back-gear and could be applied thereto with less alteration of the other old parts than could an external gear.

In order to call attention to the wide extent to which internal gearing has been known and used prior to Martin's alleged
39 invention, I will briefly refer to a very small available portion of the great number of old patents employing internal gearing, either in windmills or in apparatus of other kinds.

Considering first those in which an internal gear is employed in windmills, I will first refer to the structure illustrated in "Defendant's Exhibit Sketch No. 8," which shows a modern windmill in which internal gearing is used for the purpose of gearing back, or in other words, reducing the speed of the actuating part relatively to the speed of rotation of the wind-wheel shaft. This structure is found in letters patent 414,113, granted Oct. 29, 1889, to J. T. Hostler. The internal gear closes the pinion just as in the Martin patent in suit, and protects it from the weather in the same manner, and the extent of the engagement of the gear and pinion, and consequent freedom from lost motion, is the same in this older Hostler patent as in the Martin patent in suit. All that Martin did in back-gearing the old Mast-Foos mill shown in sketch No. 4 was to substitute for the old external gearing the old and well-known internal gearing of the Hostler patent, for the purpose of transmitting the driving power of the windmill, taking advantage of its compactness, which adapts it in a way well known to mechanics for the particular location in which he intended to place it. Such selection of means could not possibly, in my opinion, involve the exercise of the inventive faculty, but is purely within the province of the skillful mechanic in adopting well-known means to accomplish a desired end.

Internal gearing was, however, well known long before the date of the Hostler patent in connection with windmills, and an illustration of this fact is found in "Defendant's Exhibit Sketch No. 9," which typifies the construction set forth in letters patent No. 2215, granted Aug. 11, 1841, to Perry Davis. In this construction, the internal gearing is employed for the purpose of transmitting the driving power of the windmill in a mechanism wherein said driving power is utilized to turn the mill out of and into the wind, according to the requirements of the case. There exists a large number of mills employing internal gearing in various forms for this and other purposes, and I refer to the following letters patent as illustrations of such construction:

No. 254,527, March 7, 1882, to Andrews; No. 267,440, Nov. 14,

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1882, to Martin; No. 271,635, February 6, 1883, to Holcombe; No. 273,226, February 27, 1883, to Coffield; No. 283,109, August 14, 1883, to Holcombe; No. 317,731, May 12, 1885, to Colman & Turner; No. 321,750, July 7, 1885, to Pattison; No. 346,674, August 3, 1886, to Newell; all relating to windmills.

40 Internal gearing is still another form, for the purpose of transmitting the driving motion of the windmill shaft to the devices to be actuated thereby, is illustrated in "Defendant's Exhibit Sketch No. 10," the construction therein shown being found in letters patent No. 320,182, granted June 16, 1885, to Shilling. This structure illustrates a back-geared windmill in which the rotary motion of the wind-wheel shaft, after being transformed by external gearing to a slower reciprocating motion, is again transformed by internal gearing to a rotary motion. Other illustrations of internal gearing of the rack type found in the Shilling patent are set forth in the following letters patent:

No. 217,026, granted July 1, 1879, to Stewart; No. 286,596, granted October 16, 1883, to Ercanbrac; No. 357,652, granted February 15, 1887, to Barrett; No. 387,102, granted July 31, 1888, to Nagel. All of the above patents are for windmills.

In addition to the windmill patents above referred to in which internal gearing is employed, this well known and commonly used form of gearing is also generally employed in various structures of numerous kinds and for numerous purposes, and I will now refer to various other structures in which this gearing is set forth.

"Defendant's Exhibit Sketch No. 11" illustrates an internal gear which is found in a well-known publication entitled "507 Mechanical Movements," published in 1871, on pages 14 and 15 of which are found, under No. 34, the illustration and description of this device. The description is as follows:

"An internally toothed spur gear and pinion. With ordinary spur gears (such as represented in 24) the direction of rotation is opposite; but with the internally toothed gear the two rotate in the same direction; and with the same strength of tooth the gears are capable of transmitting greater force, because more teeth are engaged."

It will be observed that the advantages due to the engagement of a greater number of teeth in this style of gearing than in the ordinary spur gearing were well known long before the date of the Martin application, and that the style of gearing shown in the Martin patent was a standard style illustrated and described in the publication under consideration. In connection with this internal gear I call attention to "Defendant's Exhibit Sketch No. 12," which is taken from the same publication, where on pages 42 and 43 thereof, under No. 157, this method of changing circular motion into a reciprocating motion is illustrated and described. The mechanism shown in sketch No. 12 is identically that shown in the old Mast-Foos mill and in sketch No. 4, and the structure shown in

41 sketch No. 7, which is the structure of the patent, is nothing more than an aggregation of sketches Nos. 11 and 12, or in other words, the employment of the internal gear shown in sketch

No. 11, instead of the plain crank wheel shown in sketch No. 12. It certainly does not in my opinion involve invention to embody these two old devices clearly set forth in this old publication in a single structure, and this is all that has been done in producing the structure of the Martin patent in suit.

There are other mechanical movements which show internal gearing employed in substantially the same manner as in the Martin patent in suit. "Defendant's Exhibit Sketch No 13," illustrates, in a simplified form, the construction set forth in letters patent No. 380,697, granted April 10, 1888, to Garrett Schenck for improvement in mechanical movements. In this construction the patentee explains that the actuating rod of a windmill may be connected to the internally geared wheel of the mechanism and this in turn will drive the pinion and by means of the crank on the pinion shaft impart a vertical movement of reciprocation to the lower rod. The patentee explains that the wind-wheel connection will be desirable when the device is used in connection with a pump. It will be observed that in this construction there is a pitman connected directly to the internally geared wheel just as in the patent in suit, and that all the advantages ascribed to internal gearing where a pitman is connected to the internal gear must be found in the Schenck structure in the same manner and measure as they are found in the patent in suit. Other illustrations of mechanical movements employing internal gearing for producing reciprocating motion are found in letters patent No. 290,566, granted Dec. 18, 1883, to F. S. Gable, for mechanism for converting motion; No. 399,492, granted March 11, 1889, to Edward Burke, for means for converting motion, and No. 421,533, granted February 18, 1890, to John Wenzin, for reciprocating gear.

"Defendant's Exhibit Sketch No. 14" illustrates, in a simplified form, the construction set forth in letters patent No. 273,705, granted March 13, 1883, to John J. Berrigan, for improvement in lawn mowers. In this construction I find the precise combination of elements set forth in the Martin patent in suit employed for the same ultimate purpose, to wit, the conversion of rotary into a reciprocating motion, the same comprising an internal gear and pinion meshing therewith, a crank pin, a rod corresponding to the pitman bar of the patent, a ball-crank lever corresponding to the triangular pitman of the patent, and a reciprocating member
42 which corresponds with the reciprocating actuating rod of the patent. It is true that in this construction the patentee desired to obtain a faster motion of the reciprocating part instead of a slower motion, and that therefore it is the pinion and not the larger internal gear which is provided with the crank, but in other respects than in this non-essential one, the combination of elements is precisely the same in each of the two patents, and all of the advantages due to the employment of internal gearing in the structure of the Martin patent must of course be also found in the internal gearing of the Berrigan patent. It certainly would not require invention, but would be purely within the province of the skilled mechanic, to apply the crank pin to the larger gear wheel instead

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of to the pinion, as in the Berrigan patent, in case it were desired to produce a slower instead of a faster movement of the reciprocating part.

"Defendant's Exhibit Sketch No. 15" is an illustration of the construction found in letters patent No. 97393, granted Nov. 30, 1869, to Hall & Towne, for improvement in sawing machines. The mechanism is shown in two positions the first in the same in which it is shown in the patent, and the second in the position which it would assume if employed in the Martin patent in a windmill. In this structure I find the internal gear and pinion, the connecting pitman bar, the pivoted triangular pitman and the reciprocating member, all corresponding in their mode of operation to the same members of the structure in the patent in suit. It is true that in the Hall & Towne device, the reciprocating member is a saw, but the Martin patent in suit is not limited in its application to the operation of the pump, but may be, as the patentee states, employed to operate any appliance—a pump being given merely as an illustration of one appliance which may be operated by the mechanism set forth in the claim. In this Hall & Towne structure the internal gear is driven by a pinion, as in the patent in suit, and while the crank is attached to a second pinion driven from the internal gear it is perfectly obvious that it would not involve invention to place the crank pin on the internal gear instead of on this pinion if a different relative speed of reciprocation were desired.

"Defendant's Exhibit Sketch No. 16" illustrates the construction found in letters patent No. 232,384, granted September 21, 1880, to Jefferson Wilson, for improvement in animal powers. In this structure is found an internal gear driving a pinion provided with a crank wheel, which, by means of a connecting rod, operates a vibrating lever which imparts a reciprocating motion to a
43 vertical member corresponding to the actuating rod of the Martin patent. In this case I find another illustration of internal gearing employed to convert rotary into reciprocal motion by a pitman connection in which the internal gearing must necessarily possess the same advantageous features which are ascribed to the internal gearing of the Martin patent in the same connection.

As further illustrative of the employment of internal gearing in machines of various descriptions for the purpose of gearing up or gearing down, and for the purpose of converting rotary into reciprocating motion, I will briefly refer to the following patents which are grouped according to the nature of the mechanism in which the gearing is embodied.

Churns.

64463, May 7, 1869, Wallace; 67615, Aug. 6, 1867, Van Horn; 91467, June 15, 1869, McCurdy; 104,800, June 28, 1870, Van Meter; 181,913, Sept. 5, 1876, Creswell; 217,637, July 15, 1879, Parker; 237,792, Feb. 15, 1881, Wilson; 280,890, July 10, 1883, Wilson; 290,639, Dec. 18, 1883, Green; 297,482, Apr. 22, 1884, Wilson; 303,159, Aug. 5, 1884, Hisy; 314,322, M'ch 24, 1885, Fisk; 392,045, Oct. 30, 1888, Loth & Zeigler; 399,728, M'ch 19, 1889, Barlow.

Hay-tedder.

97438, Nov. 30, 1869, Perry; 106,087, Aug. 2, 1870, Smith; 113,848, Apr. 18, 1871, Burdick; 309,745, Dec. 23, 1884, Thomas; 311,614, Feb. 3, 1885, Skinner; 315,856, Apr. 14, 1885, Thomas; 336,723, Feb. 23, 1886, Kohler; 345,932, July 20, 1886, Spicer; 350,566, Oct. 12, 1886, Spicer; 395,307, Jan. 1, 1889, Arndt.

Sewing machines.

Reissue No. 2746, Aug. 20, 1867, Hodgkins; 76385, Apr. 7, 1868, Bartlett; 304,924, Sept. 9, 1884, Freese; 424,290, M'ch 25, 1890, Hall.

Meat-choppers.

Reissue No. 2700, July 23, 1867, Foster; 79645, June 30, 1868, Gilpatric; 104,940, July 5, 1870, De Poe; 139,501, June 3, 1873, Edwards; 306,515, Oct. 14, 1880, Perry.

44 Bicycles.

252,329, Jan. 17, 1882, Richards; 341,389, May 4, 1886, Prescott; 386,169, June 17, 1888, Spencer.

Harvesters.

85722, Jan. 12, 1869, Barnes; 128,584, July 2, 1872 Brown.

As further illustrative of the varied and extensive application of internal gears in the different arts, I refer to the following patents: No. 323,244, July 28, 1885, Webster & Pease, harvester knife-grinder; No. 417,743, Dec. 24, 1889, Ross, feed-cutter; No. 289,558, Dec. 4, 1883, Richards, printing press; No. 89217, April 20, 1869, Hall, sewing machine; No. 342,474, May 25, 1886, Swenson, draw-bench; No. 345,500, July 13, 1886, Gordon, coal-mining machine; No. 355,350, Jan. 4, 1887, Smith, washing machine; No. 434,883, Aug. 19, 1890, steam drilling machine; No. 309,581, Dec. 23, 1884, Stephenson, broad-cast seed-sower; No. 374,940, Dec. 20, 1887, Copeland, apparatus for cleaning car seats; No. 396,055, Jan. 8, 1889, Stone, warp-beaming machine; No. 332,817, Dec. 22, 1885, lathe attachment; No. 421,480, Feb. 18, 1890, Brady, windlass; No. 204,158, May 28, 1878, Lewis, power press; No. 411,074, Sept. 17, 1889, rotary shears; No. 305,656, Sept. 23, 1884, Babbitt, rotary engine.

This latter patent illustrates the use of both spur gear and internal gear in the same machine side by side, to accomplish the same purpose, and shows the interconvertability of the two forms of gear.

In all of the preceding illustrations of internal gearing, gathered from various classes of patents, this gearing has the same advantages and operates in the same manner as the internal gearing of the Martin patent in suit; and in some cases the patentees point out the smoothness of motion obtained by such gearing as for instance in the case of the Newell windmill patent, No. 346,674, in which the patentee states that "all the gear wheels are in such

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relative proportion in size, number of teeth and pitch as to insure a smooth running of said wheels."

In view of this extensive use of internal gearing in machines of such varied character for the same purpose as and for purposes other than those of the patentee, in combination with the same mechanical elements to produce the same mechanical movements and in other combinations, I am led to conclude that there
45 was no invention in applying such an internal gearing to the old Mast, Foos mill, thereby producing the mill set forth in the Martin patent, since the internal gearing operates in the same manner and produces the same results in the same way in this situation that it did when combined with the same elements in the old machines hereinbefore pointed out, or when used in other combinations, as in the other old machines in which it was employed in other combinations.

I have carefully read the affidavit of Mr. Robert H. Wiles, entitled in this cause, and agree with his conclusions as to the meaning and construction of the patent in suit, and as to the scope and meaning of the claims thereof. I have also examined "Complainant's Exhibit Stover Infringing Mill," and fully and entirely agree with Mr. Wiles both as to his conclusion as to the non-infringement of the patent in suit by said exhibit mill and as to his reasons for his conclusions. These conclusions are re-enforced by a comparison of the patent in suit with the prior art, as I have explained the same in this affidavit, since in view of said prior art it would, in my opinion, be impossible to so construe the Martin patent in suit as to include and cover the structure of defendant's mill without also including and covering devices shown to be old in said prior art.

I have also examined "Complainant's Exhibit Complainant's Patented Windmill," and find that the same is not made in accordance with the Martin patent in suit, and is not covered by the claims thereof, but is, on the contrary, in so far as those portions of the mill are concerned, which are involved in this controversy, made in accordance with the windmill set forth in a later patent, granted to the same Samuel S. Martin, June 27, 1893, No. 500,340, said exhibit mill having only one feature in common with the mill of the patent in suit, to wit, the internal gearing, while the connection between the gearing and the actuating rod is not that of the patent in suit, but that of said later Martin patent of 1893.

I have carefully read the opinion of the court, and the dissenting opinion of Judge Thayer in the circuit court of appeals, eighth circuit, in the suit of Mast, Foos & Company *vs.* Dempster Mill Manufacturing Company, and I am led to conclude from a careful reading of said opinions that the prior art as it was before the court in said case was different from and not so full and correct a representation as is found embodied in my present affidavit, and that, if the prior art had been fully and correctly before the court in said suit, then, in my opinion, said court could not have possibly
46 given to the Martin patent in suit a broader construction than that given to it by Judge Thayer in his dissenting opin-

ion, and, further, that, in accordance with Judge Thayer's construction of said Martin patent, the windmill made by defendant herein could not possibly be held to infringe the claims of the patent in suit. As confirming my understanding of the showing of the prior art, which was made in the Dempster suit, I understand that the only anticipatory or limiting matter before the court in said suit was found in the patents hereunto annexed and marked "Defendant's Exhibit Prior Art in Dempster Suit."

(Signed) IRVINE MILLER.

Subscribed and sworn to before me this 6th day of December, 1897.

(Signed) FREDERICK C. GOODWIN,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Dec. 6, 1897. S. W. Burnham, clerk.

On the same day, to wit, the sixth day of December, 1897, there was filed in the office of the clerk of said court in said entitled cause the affidavit of Irvine Miller, which said affidavit is in the words and figures following, to wit:

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } In Equity.

STATE OF ILLINOIS, } ss:
County of Cook, }

Irvine Miller, being first duly sworn, deposes and says:

I am the same Irvine Miller who has already given an affidavit in this case. My attention has been called to a drawing entitled: "Cut of Filer & Stowell Company's Lath Bolter," which I have examined, and I understand the same to show a driving shaft, provided with a pinion which meshes with an internal gear, said internal gear having thereon a wrist pin which is connected with an operating rod, to which it imparts a motion both of reciprocation and of oscillation. I find in this structure an internal gear-
47 ing identical with that of the Martin patent in suit, in which the pinion drives the internal gear and in which the internal gear has a wrist pin connected to a reciprocating part, and it is obvious that in this construction the internal gear must operate with the same smoothness and present the same advantages which are ascribed to it in the internal gear of the patent in suit. In my opinion, it would not involve invention to employ this gear instead of the crank wheel found in the old windmill "Defendant's Exhibit Mast-Foos Mill."

(Signed) IRVINE MILLER,
Notary Public.

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Subscribed and sworn to before me this 6th day of Desember, A. D. 1897.

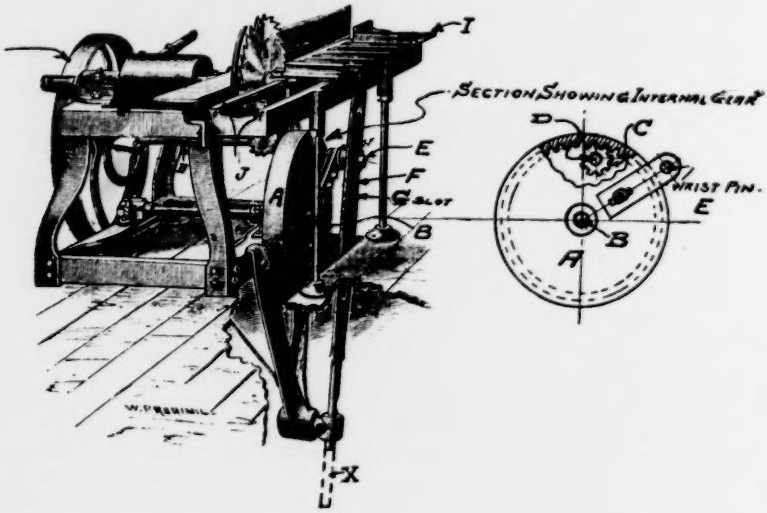
——— ———.

(Endorsed:) Filed Dec. 6, 1897. S. W. Burnham, cl'k.

On the same day, to wit, the sixth day of December, there was filed in the clerk's office of said court, in said entitled cause, the affidavit of C. F. Maynard, which said affidavit is in words and figures following, to wit:

Affidavit of C. F. Maynard. Filed Dec. 6, 1897.

Cut of Filer & Stowell Co.'s lath-bolter.



48 United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } In Equity.

STATE OF WISCONSIN, }
County of Milwaukee, } *ss:*

C. F. Maynard, being first duly sworn, deposes and says:

That he is a resident of Milwaukee, in said county and State; that he has been in the employ of the Filer & Stowell Company, of the same place, for more than twenty-five years last past; that he is at present time foreman of the pattern shop of said company; that said company had designed and began the manufacture of a lath-bolter more than eighteen years prior to the date of this affi-

davit; that a cut of said lath-bolter is attached to this affidavit and marked "Cut of Filer & Stowell Co.'s lath-bolter;" that he is perfectly familiar with the construction and understands the operation of said lath-bolter, referring to the attached cut thereof; A is an internal gear fast on the shaft B. C is a pinion meshing with the internal gear A and fast to a driving shaft D. E is a wrist pin projecting from the internal gear A. F is a driving rod connected with the wrist pin E, on the internal gear A, by means of the slot G therein. H is a driving wheel fast to the shaft D.

Power applied to the wheel H and communicated through the parts D C A E, will reciprocate the driving rod F longitudinally — as indicated by the dotted lines X—and will also reciprocate the upper end thereof in the arc of a circle, which reciprocations slide the carriage I on its tracks J, thereby presenting a slab (not shown) to the saw K to be cut longitudinally into lath bolts.

Affiant further states that he is in no way interested in the result of this suit, and makes this affidavit for the sole purpose of explaining the operation and construction of the machine illustrated in the cut hereto attached.

(Signed) C. F. MAYNARD.

49 Subscribed and sworn to before me, a notary public, in and for Milwaukee county, Wisconsin, this third day of December, A. D. 1897.

(Signed) J. L. MANAHAN,
[SEAL.] *Notary Public, Milwaukee County.*

Filed Dec. 6, 1897.

S. W. BURNHAM, *Clerk.*

On the same day, to wit, the sixth day of December, 1897, there was filed in the clerk's office of said court the affidavit of Willis A. Merrifield, which said affidavit is in the words and figures following, to wit:

Affidavit of Willis A. Merrifield. Filed Dec. 6, 1897.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } In Equity.

UNITED STATES OF AMERICA, *Northern District of Ills.*, } *ss:*

Willis A. Merrifield, being duly sworn, states as follows:

I am of the age of 42 years, reside in the city of Freeport, in the State of Illinois, and am by profession and occupation secretary and treasurer of the above-named corporation defendant. I have held such position for some sixteen years last past. By reason of my position and my connection and otherwise with the affairs of the

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defendant, I am now and have been during all that time entirely familiar with all the business affairs and transactions of the company.

The general business of the corporation defendant consists in the manufacture and sale of a wide variety of agricultural machines and hardware specialties, and we have long been among the largest manufacturers of the United States in these industries and in some of the branches of our business, as for example, the grinding-mill industry, we are the largest manufacturer in the United States.

I have said that I have full knowledge of the entire business affairs of the defendant in this case, and such knowledge extends to the litigations that my company has had over letters patent and inventions. I, of course, know of the case referred to in the application papers of the complainant for injunction in this case, namely, the case of Mast, Foos & Co. *v.* Dempster Mill Manufacturing Co., and whatever connection or association my company had with that case arose and existed only under the following facts and conditions:

Neither my company nor its officers knew of the litigation referred to until after it had proceeded to a considerable extent in its preparation. We had nothing to do with the pleadings filed in that case, or the organization of any of the defenses in the case. After the answer had been filed and the complainant had taken its opening proofs, we ascertained that such case was pending, and that it would involve questions that would if determined in a certain way, affect interests of my company. We knew that there had been a certain amount of litigation carried on by this complainant against an inconsequential and weak windmill manufacturer in Nebraska, namely, the Spencer Manufacturing Company, and that the results of that litigation had been some kind of a consent decree and an apparent recognition of the validity of the Martin patent. We knew that the defendant, The Dempster Mill Manufacturing Company, was only one of the average windmill manufacturers of the same locality, and we were fearful that some decree, by consent or apparent but fictitious standing would be given by settlement or otherwise to the patent in that litigation, and I therefore, for these reasons, instructed the company's counsel, Mr. Morrison, to watch that case so as to understand every movement that was made in it and know at its termination exactly what had happened in connection with its preparation and trial.

I know that Mr. Morrison looked after the interests of the company in this connection in that case to that extent, but at no time was it ever intended by the company in any way that Mr. Morrison's relations to that case should be anything other or different than above outlined, and at no time had we ever had the slightest intention of putting ourselves in the place of a defendant in that case, or doing any act or thing that would bar us from making a full and complete defense, to the patent upon the defenses as we should organize and present them, if we were ever sued.

I think it is also fair for the court to understand in this connection that the matter of internal gear for driving the different parts

of the windmill, whether the actuating rod, or any other part of the mill, is a matter without vital importance commercially so
51 far as windmill construction is concerned. So far as the use of an internal gear for driving the actuating rod of a windmill is concerned, I know that not more than fifteen per cent. of the windmills in this country have now or have ever had such actuating rod driven or acted upon by internal-gear mechanism of any description, and it is my belief that not more than five per cent. have had any kind of internal-gear mechanism in connection with their actuating rod. In fact, besides ourselves, and the complainant, there are now but two other manufacturers of windmills in the United States who employ the internal-gear mechanism in any manner in connection with the actuating rod of their windmills.

I know that the largest windmill manufacturers of the United States use the external gear for actuating this rod, such for example, as the aermotor company, having its principal place of business at Chicago, Illinois, who has the largest output of windmills of any single windwill manufacturer of the United States, and who now use and have always exclusively used the external gear.

I know that my company in adopting the internal-gear construction for operating the actuating rod of their windwill did so as a mere accident or incident of construction in the first instance, without any knowledge whatever of the Martin patent, or of the mechanism of the Martin patent in suit. My company had used both the internal and external gearing in the various branches of their mechanical industries, and the particular application for internal gearing for driving the actuating rod of their windmills was simply the transferment of such internal gear from other machines made by them side by side with their windmill, such as power feed-mills driven by horse-power instead of wind-power.

I desire also to state that the company did combine and utilize this internal-gear mechanism for their actuating rod in a simple, attractive and highly useful form; that we spent considerable sums of money in advertising our mill with this particular internal-gear arrangement, and have pushed this particular type of mill upon the trade and market, and have by such advertisement and by such attractive form of the alliance of the mechanical parts, made a mill that has become known to the trade as our peculiar manufacture, and highly acceptable to it, and any compellment upon our part to change the form and appearance of this mechanism and its relation towards each other would greatly injure our trade in this particular style and type of windmills. Moreover, as every manufacturer knows, it is a great expense and inconvenience to attempt to
52 remodel and recast any part of a machine, trivial though it may be, and substitute any other parts therefor.

I believe and I know that the windmill trade also recognize this fact to be true, namely, that my company practically, commercially and successfully introduced the internal gear in a windmill for driving the actuating rod, and made this particular part of the windmill acceptable to the windmill industry. I never knew or heard of the complainant in this case using an internal-gear mech-

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anism for driving their actuating rod until some time after we had introduced our internal-gear windmill device complained of in this case upon the market, and advanced by reason of our reputation as manufacturers, and made it widely known as a part of windmill construction. I never saw a windmill made as to its internal-gear mechanism like the mill of the Martin patent in suit, nor do I believe that such a mill could be commercially manufactured and sold on the market. It is exceedingly awkward in its operation, heavy and abnormal in the construction of its parts, and is just that kind of a mechanical appliance or monstrosity that the windmill trade will neither buy nor use.

I have endeavored for several years past, by search in every direction to find a mill, that was ever constructed by the complainant in this case or any one else, like or substantially like this Martin patent, and have been unable to find any such construction.

I desire also to be understood that in our windmill manufacture the mechanical arrangement for driving the actuating shaft is about equally divided between the external and internal gear, and that we make about as many of one type of mills as the other; that as to this matter, it is largely a question of taste and education; that in some parts of the country and amongst some customers they prefer and ever require and demand an external gear for their windmills, and in other parts of the country and amongst other customers, the internal gear is preferred and demanded.

I have examined the windmill identified by the affidavit of Mr. Wiles in this case, and marked "Defendant's Exhibit Mast-Foos Mill," and have never heard of or known of the complainant actually manufacturing and selling upon the market any windmill except a windmill constructed like this exhibit except in a very few instances, until within two years past, when I heard that the complainant has attempted to substantially copy our windmill, especially as to the internal-gear arrangement and place the same upon the market.

53 I know that my company publicly manufactured, applied and used internal-gear mechanism in their windmill construction certainly before the month of March, 1890; such internal gear being mounted upon the wind-wheel shaft and used to drive the actuating rod of the windmill, such motion being rotary instead of reciprocating, the motion being transmitted from the internal gear to a pinion mounted on the shaft bearing a miter gear meshing with a smaller miter gear which rotated the actuating shaft. I herewith attach to my affidavit marked "Exhibit A," a wood-cut illustration of this internal gear, both a prospective view of the entire mechanism and a detailed view of the internal gear itself, which can be readily understood upon inspection. This wood-cut representation was gotten up and used by the company in their catalogue and literature and disposition during 1890, and I hereto attach such wood cut to this affidavit and mark the same "Defendant's Exhibit Wood Cut A."

(Signed) WILLIS A. MERRIFIELD.

Subscribed and sworn to before me this 6th day of December, A. D. 1897.

(Signed) FREDERICK C. GOODWIN,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Dec. 6th, 1897. S. W. Burnham, clerk.

54 On the same day, to wit, the sixth day of December, 1897, there was filed in the clerk's office of said court the affidavit of Robert H. Wiles, which said affidavit is in words and figures following, to wit:

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of Robert H. Wiles.

Affidavit of Robert H. Wiles. Filed Dec. 6, 1897.

STATE OF ILLINOIS, }
County of Cook, } *ss:*

Robert H. Wiles, being first duly sworn, on oath deposes as follows:

I am forty-seven years of age and by occupation am a patent solicitor and mechanical expert, living and doing business in the city of Chicago, Illinois. As a preparatory education, I graduated in the course of science at Cornell university in 1874, having given special attention to mathematics and mechanics. In January, 1875, I began the study of law in the office of Hon. Joseph M. Bailey, of Freeport, Illinois, and was admitted to the bar in Illinois in January, 1877, and entered upon the general practice of law at Freeport. In the latter part of the year 1881 I filed a number of applications for patents for inventions; and these applications having been successfully prosecuted, my work in this specialty increased to such an extent that I soon after gave up the general practice of law and have since that time given my entire attention to matters pertaining to invention. During this period I have prepared a great number of applications for patents, and have thus become familiar with the language of specifications and claims and the readings of drawings. In the prosecution and amendment of applications, I have been constantly required to compare the devices shown and described in such applications with related devices shown in prior patents and publications, and to draw claims distinguishing between
55 such new structures and those found in the prior art. I have very often made preliminary examinations to determine the probable patentability of inventions, and have made frequent searches in various arts for the purpose of passing upon the validity and scope of patents already issued. I have frequently tes-

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tified within the past five years, as a mechanical expert in patent causes, and in so testifying have been called upon to compare patented devices with prior structures and the later structures alleged to infringe, in order to construe the claims of patents in suit and determine whether or not the later structure infringed the claims thus construed. From the experience and preparation thus detailed, I believe myself competent to testify as a mechanical expert in any suit involving mechanical devices and patents therefor.

So far as the art of windmill construction is concerned, I am very familiar with it, having prepared and prosecuted a considerable number of applications for patents for inventions relating to windmills, and having examined at different times many operative windmills of various kinds.

I have examined carefully and I understand fully the patent in suit herein, namely, United States patent No. 433,531, issued August 5, 1890, to Samuel W. Martin, assignor to the Mast, Foos & Company, for improvements in windmills. I have also examined and am familiar with the windmill manufactured by said Stover Manufacturing Company, and alleged by complainant to infringe the claims of the patent in suit, and have examined a mill said to have been manufactured by the complainant herein, said mill being in the possession and at the office of Messrs. Hill & Hill, of counsel for complainant, who showed it to me as representing complainant's manufacture under the patent in suit. Furthermore, I have examined a windmill marked "Defendant's Exhibit Mast-Foos Mill," which is constructed in exact accordance with the drawing of the patent in suit, with the exception that the crank plate in said exhibit is mounted directly on the wind-wheel shaft, and necessarily rotates at the same speed as said shaft, whereas, in the mill of the patent in suit the crank plate is an internal gear, engaging a pinion on the wind-wheel shaft, and thereby rotated at a slower speed than that of the shaft. In this exhibit mill, the connection of the crank plate with the pump rod is exactly the same as in the mill of the patent in suit, and includes the pitman bar and rocking triangular pitman shown and described in the patent.

The invention of the patent in suit relates to improvements in windmills, and the specification of the patent opens with an
56 alleged statement of the nature of the invention, couched in such terms, however, as to have no special relation to the art of windmill construction, but being equally applicable to any machine involving a driving shaft and a back gearing transmitting the motion of the driving shaft to a pitman and thereby converting the rotary motion of the shaft into the reciprocal motion of the pitman. The statement of the invention is as follows:

"The invention consists, essentially, of an improved back-gear organization involving an external-toothed pinion and an internal-toothed spur gear, the pinion being mounted on the wheel shaft, and the gear having formed on or connected with the wrist pin, to which the operating pitman is attached whereby the speed of the main shaft as applied to the wrist pin is reduced, and whereby, also, all pounding and lost motion is prevented as the pitman connection

passes over the center and changes from a pushing to pulling action. This object is accomplished by the fact that a plurality of the pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear."

The elements of the invention set forth in the first sentence of this statement are, a driving shaft and a pinion mounted thereon, an internal gear engaging the pinion and a pitman attached to the wrist pin, and provided with a wrist pin, "whereby the speed of the main shaft as applied to the wrist pin and pitman is reduced, and whereby, also, all pounding and lost motion is prevented, as the pitman connection passes over the center and changes from a pushing to a pulling action." The elements of this combination are all old, not only singly, but in combination and in the exact relation and for the exact purpose set forth in this sentence. There is nothing in the sentence confining the invention so defined, to the art of windmill construction; and no mechanic or mechanical expert looking at this sentence could determine from reading it, whether it belonged in a patent for a geared windmill, or for a reaper, or for a printing press, or for a cross-cut saw, or for a machine of any other class in which it is desirable or common to combine with a driving shaft and a reciprocating rod, an internal back gearing adapted to reduce the speed of the driving shaft in transmitting its motion to the reciprocating rod. Furthermore, the second sentence of this statement of invention ascribed its superior advantages to the fact that "a plu-
rality of the pinion teeth are always engaged with the inter-
57 nal spur gear, resulting in giving a perfectly uniform and
smooth and noiseless reciprocating motion to the actuating rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear."

In the first place, this statement of practical advantages resulting from the use of the internal gear is only true to a very limited degree, the fact being that in the actual use of a windmill, the back gearing, whether internal or external, will run smoothly until it becomes so worn as to develop lost motion between the engaging teeth, when there will be a jerk at each change of application of force from a push to a pull; but assuming that the statement is true, and the use of the internal gear gives all the advantageous results set forth in this part of the statement of invention, there is still nothing in the statement to indicate that the invention belongs to the art of windmill construction any more than to any other class of machines to which the driving shaft and pinion, the internal gear with its wrist pin and the pitman operated by the wrist pin might be advantageously used. In fact, the combination of elements set forth in this statement of invention cannot possibly have any advantage, as part of a windmill, that it would not have in any other machine of which it is adapted to form a part; and the advantages set forth in this statement of invention, so far as they can exist at all, are evidently of such a nature that they would

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be found as fully in one kind of machine as another. That the practical advantages claimed for this particular kind of gearing are largely imaginary is at least strongly suggested by the fact that in machines of many kinds with which I am familiar, reduced speed is secured by external gearing much more frequently than by internal gearing; and that in this very class of windmill construction, an immensely larger number of back-geared mills are made with external than with internal spur gears. Such superior advantages as may be inherent in internal gearing are not only always the same, and independent of the function of the machine in which they happen to be used, but they had been known long before the invention of the patent in suit and were open to free utilization by the public. In a volume known as "507 Mechanical Movements," copyrighted in the year 1868, I find on page 14, in figure 34, a representation of the internal gear and pinion; and on the opposite page, 15, is the following descriptive statement:

"34. An internally toothed spur gear and pinion. With ordinary spur gears (such as represented in 24) the direction of rotation is opposite; but with the internally toothed gear, the two
58 rotate in the same direction; and with the same strength of tooth the gears are capable of transmitting greater force, because more teeth are engaged."

Since the statement of invention at the beginning of the specification of the patent in suit, is wholly misleading and evidently has no relation to the real invention, it is necessary to examine the specification, claims and drawing of the patent in order to determine what invention, if any, is really disclosed thereby.

The patent shows and describes the head and gearing of a windmill, the head being represented by a casting lettered A, adapted to be fastened upon the turn-table of a windmill, the casting being formed with a bearing block B adapted to support the shafting of the mill and with a laterally projecting arm C, adapted to support an oscillating triangular pitman D. The pitman D is *devoted*, at one of its angles, on the upper and outer end of the arm C, its adjacent angle being pivotally connected to the upper end of an actuating rod, or pump rod O, which extends downward through the head to a pump or other operative mechanism below. The wind-wheel shaft L is journaled in the bearing block B, and is provided with a pinion M, which engages the teeth of an internal gear G, mounted on a second shaft K, also journaled in the bearing block B, its axis being in the same horizontal plane with the axis of the shaft L. The rear face of the internal gear G (being the front face in the drawing) is provided with a wrist pin F; and this wrist pin is connected by a pitman bar E, with the third angle of the pitman oscillating D. The rotation of the wind-wheel shaft L and pinion M evidently rotates the internal gear G, with its wrist pin F, at a reduced speed; and the rotation of the internal gear and wrist pin, communicated to the pitman D, through the pitman bar E, oscillates the upper angle of the pitman alternately toward and away from the wind-wheel shaft, thereby alternately lowering and raising the angle of the pitman which is connected with the upper end of the rod O,

and thus giving a vertical reciprocation to the rod. I have underscored the words "pitman" and "pitman bar" throughout this description, in order to call particular attention to the use of these terms in the specification, since the same terms occur in the claims, in which their meaning is a matter of importance. The three claims of the patent are as follows:

"1. *The combination, with a windmill driving shaft and a pinion thereon, of an internal-toothed spur wheel mounted adjacent to the said shaft and meshing with said pinion,* a pitman connected with
59 the spur wheel, *and an actuating rod connected with the pitman.*

"2. *The combination with a windmill driving shaft and a pinion mounted thereon, of an internal-toothed spur wheel mounted adjacent to said shaft and meshing with said pinion,* a pitman bar connected to the spur wheel, a pivoted pitman connected to the said bar, *and an actuating rod connected to said pitman.*

"3. The combination, with the upper part of a windmill turntable, the main shaft mounted thereon, and a pitman pivoted thereto, an actuating rod carried by the pitman, and a pinion mounted on said shaft, of a shaft or stud adjacent to the main shaft, an internal spur wheel mounted on said shaft or stud and having a wrist pin, and a pitman bar connected to the wrist pin and to said pitman."

Claim 1, if read without reference to the specifications and drawing, is for a combination of elements that might be found in machines of many other classes, as well as in a windmill; and merely calling the driving shaft a "windmill driving shaft" is not enough to differentiate this combination from a combination of the same elements found in a machine of any other class, the only difference being that in such other machine, the driving shaft might be called a "printing-press driving shaft," or "reaping-machine driving shaft." Construing this first claim as being broadly for the combination of elements found in its terms, and without the explanation of those terms found in the patent, it may therefore be met and anticipated by any prior use of those elements in combination in a machine of any kind; and thus construed, it is undoubtedly invalid. The first claim thus broadly construed would not only be invalidated by the use of the same combination of elements in any prior machine, as a conclusion of law; but it ought to be so invalidated, as a matter of reason, since it would clearly involve no invention whatever to transfer this internal back gear and pitman from any other machine to a windmill, and external back gear and pitman having been in common and extensive use in windmills, before the date of invention of the structure of the patent in suit.

Aside from this consideration of the first claim, taken alone, I wish to compare it with the somewhat different second claim, for the purpose not only of finding a valid construction for the first claim, but of determining the difference between the first and second claims, since it may be fairly assumed that the two claims would not have been granted, except upon the assumption that they are for sub-
60 stantially different statements of invention. For the purpose of assisting in this comparison, I have underscored — both

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claims, the language that is common to both, the parts not underscored in the two claims being, therefore, those to which we must look for the difference between them. The words not underscored in claim 1 are "a pitman connected with the spur wheel;" and the words not underscored in the second claim are "a pitman bar connected to the spur wheel, a pivoted pitman connected to the said bar." In other words, the first claim is for the combination with the driving shaft and its pinion, the internal gear and actuating rod, of "a pitman connected with the spur wheel;" and the second claim is for the combination with the same driving-shaft pinion; internal gear and actuating rod, of "*a pitman bar connected to the spur wheel*," and "*a pivoted pitman connected to the said bar*."

In the underscored clause quoted from the second claim there are two elements, the pitman bar and pitman; whereas, in the underscored clause taken from the first claim, there is only one element, the pitman. Which is the new or added element in the second claim, as compared with the first? Evidently the pitman bar. What is the function of the pitman bar added to the elements of the first claim, to make the second? Its function is evidently to "connect the pitman with the spur wheel." In what respect, then, does the second claim differ from the first? In the fact that whereas, in the first claim the connection of the pitman with the spur wheel is not limited to any particular means, the second claim specifies the pitman bar as the means for connecting the pitman with the spur wheel, in other words, the difference between the two claims may be stated like this. The first claim is for the combination with the driving shaft, pinion, internal gear and actuating rod, of the pitman connected, with the spur wheel, in any desired manner: whereas, the second claim is for the combination with the driving shaft, pinion, internal gear and actuating rod, of the pitman connected with the spur wheel, by means of the pitman bar. This construction of the claims not only differentiates them, but it is consistent with the specification and expresses the invention disclosed in the patent. Aside from the statement of invention at the beginning of the specification, which, as I have already pointed out, can have no relation to the real invention disclosed by the patent, there is nowhere in the specification any suggestion that the "pitman" of the claims can be anything different from the oscillating pitman D shown in the drawings, or that in construing the claims, the word "pitman" may be applied indis-
61 criminately to either the oscillating pitman D or the separate and independent pitman bar E. For this reason, if for no other, I should be clearly of the opinion that the "pitman" of claims 1 and 2 is the oscillating pitman D, and that the pitman bar of claim 2 is the pitman bar E of the drawings. Furthermore, it was old, long before the invention of the patent in suit, to combine with a wind-wheel shaft, and its crank plate and wrist pin, an element corresponding exactly to the pitman bar E of the patent in suit, connecting the wrist pin with the pump rod of the windmill; and it was also old, at the time of the invention of the device of the patent in suit, to combine, in a pumping windmill a wind-wheel

shaft provided with a pinion, an external gear wheel larger than the pinion and engaging the same, a wrist pin mounted on the large gear, a vertically reciprocating pump rod, and corresponding to the pitman bar of the patent in suit. I am well aware that in the prior art, the bar connecting the wrist pin of the crank plate, or of the gear wheel, with the pump rod was, or might properly have been called the "pitman," but in the patent in suit, the inventor has added to that old and well-known element a new, separate and distinct element, namely, the oscillating triangular lever D, which he has chosen to call "the pitman," at the same time changing the name of the old and well-known pitman of the prior art to "pitman bar." Having chosen the names of the elements of this structure, he cannot now be heard to say that these names have not the meanings given them in the specification, as illustrated in the drawings; and, in my judgment, this position is fortified by the fact that if the word "pitman" in claim 1 be transferred from the pitman D of the specification to the pitman bar E, the claim becomes invalid, since there could be no possible invention in changing from the old external-toothed back gear to the internal-toothed back gear of the patent in suit, the gearing being used in combination with the old wind-wheel shaft, the old pump rod and the old pitman or pitman bar connecting the pump rod with the wrist pin on the larger gear wheel of the gearing. I have no doubt whatever that claim 1 can only be properly sustained when limited to the combination with the wind-wheel shaft, pinion, internal gear and actuating rod, of the oscillating pitman D, suitably connected with the internal gear or spur wheel; and that claim 2 is for the combination of the same elements covered by claim 1, with the addition of the pitman bar, as a specific means for connecting the pitman with the spur wheel.

62 Referring now to the exhibits mentioned in the opening of this deposition, it will be seen that "Defendant's Exhibit Mast-Foos Mill" is made in accordance with the drawing of the patent, so far as the same relates to the pump rod O, the rocking triangular pitman D, and the pitman bar E, the connections and functions of these parts being the same as in the mill of the patent in suit. The difference between this exhibit and the mill of the patent in suit, is simply that in the mill of the patent the internally toothed spur gear is substituted for the crank plate of the exhibit, the internal gear being rotated by a pinion on the wind-wheel shaft, and being provided with the wrist pin of the old crank plate; and this wrist pin being connected with the rocking triangular pitman D, by means of the pitman bar E, the same as in the exhibit mill.

The mill shown me by complainant's counsel as representing complainant's present manufacture, and which is marked "Complainant's Exhibit Complainant's Patented Windmill," is very different from the mill of the patent in suit, the motion of the wrist pin in this exhibit being transmitted to the pump rod by means of a single bar corresponding to the pitman bar E of the patent in suit, and the oscillating pitman D of the mill of the patent in suit

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being entirely omitted. So far as the wind-wheel shaft and its pinion, the internal gear and its wrist pin, the pump rod and the connecting pitman bar of this mill are concerned, they are not within the invention disclosed by either claim 1 or claims 2 of the patent in suit; and, in my judgment, the combination of these elements, stated generally, and without the explanation of terms afforded by the specification and drawing of the patent, is not patentably novel, and was not patentably novel at the date of the invention of the device set forth in the patent in suit.

The mill exemplifying the defendant's construction comprises a wind-wheel shaft and pinion, an internal gear engaging the pinion and provided with a wrist pin, a vertically reciprocating pump rod and a single bar connecting the pump rod and wrist pin, and corresponding to the pitman bar E of the patent in suit.

It does not contain the oscillating pitman which is an element of the mill shown and described in the patent; and it therefore does not contain the invention set forth in claims 1 and 2 of the patent in suit. While neither the complainant nor the defendant manufactures the mill of the patent in suit, or a mill embodying the invention of the patent, the complainant's mill, as now made, follows closely the construction of defendant's mill, and if defendant's mill was put on the market before complainant began making its present mill, the latter is, in a general way, a copy of the former.

63 As to claim 3 of the patent in suit, it is only necessary to say that it enumerates all the elements found in the combination found in claim 2, and is further limited by the recital of specific details of construction not found in claim 2. It cannot be contended, in this suit, that the defendant's mill embodies the invention set forth in claim 3 of the patent.

I have not attempted in this affidavit to go into any detailed examination of the prior art relating to the invention in controversy herein. The development of the art, is, however, represented quite fully and with perfect fairness in a large sheet of drawings which will be exhibited on behalf of defendant; and it is explained at length in the affidavit of Irvine Miller in this cause.

After a careful reading of Mr. Miller's affidavit, I find that its statements are in accordance with the facts, and its conclusions are in accordance with my own.

(Signed) ROBERT H. WILES.

Subscribed and sworn to before me, this 6th day of December, A. D. 1897.

(Signed) FREDERICK C. GOODWIN,
[SEAL.] *Notary Public.*

Filed Dec. 6, 1897.

S. W. BURNHAM, *Clerk.*

On the same day, to wit, the sixth day of December, 1897, there was filed in the clerk's office of said court the affidavit of Oscar J. Ziegler, which said affidavit is in the words and figures following, to wit:

Affidavit of Oscar J. Ziegler. Filed Dec. 6, 1897.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & Co.
vs.
STOVER MANUFACTURING Co. } In Equity.

UNITED STATES OF AMERICA, }
Northern District of Ills., } *ss.*:

Oscar J. Ziegler, being first duly sworn, states as follows:

My name is Oscar J. Ziegler. I am 41 years of age. I reside at Freeport, Illinois, and am superintendent of the above-named corporation defendant. I have held such position as superin-
64 tendent for sixteen years last past and during that time have had full knowledge of all the mechanical devices manufactured and put upon the market by the defendant, the same having been under my supervision by virtue of my office as above stated.

I am entirely familiar with the windmill construction of the defendant put upon the market and organized and manufactured for sixteen years past. I am also an inventor and patentee of various mechanical appliances practically used in the industrial arts and manufactured by the defendant, and I have especially organized and invented the windmill constructions of the defendant during my employment and connection therewith.

I am entirely familiar with letters patent upon windmills of a large variety, and have frequently examined and studied various letters patent relating to this subject-matter during that time, and believe that I am capable of understanding the construction and operation of a windmill device from information alone by the specification and drawings of a patent.

I have read and heard read the affidavits in this case made by Mr. Merrifield, Mr. Wiles and Mr. Miller, and know and understand the contents thereof. As to the affidavit of Mr. Merrifield, I know from personal knowledge and by reason of my position and association with the defendant as above given, that all the facts and statements made in that affidavit are exactly true as therein stated. I believe also from my practical knowledge of windmill manufacture and from the study that I have given this subject during the past sixteen years, that all of the mechanical statements and conclusions and facts set forth in the affidavits of Mr. Wiles and Mr. Miller are true, and that the mechanical operations of the various devices therein shown, in actual use would be practical and successful operations identified by the letters patent, and by the various statements of these expert witnesses respectively.

I also identify with my affidavit by marking them "Exhibits Nos. 1 and 2," the internal and external gear mechanism used by the defendant in their windmill construction for many years past as set forth in the affidavit of Mr. Merrifield. I know that there is

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more pounding or loose shackeled motion or mutilation or stripping of cogs in the windmills of the defendant and in the gear thereof, operated by external gear or by internal gear as shown by these two exhibits identified with my affidavit, and I know that during all the years I have been connected with the company, that there has never been the slightest complaint or trouble or criticism with the defendant's windmill structures by reason of any pound-
65 ing or lost motion or unsatisfactory running or cog displacement of the external gear of their windmill construction, and I know as a matter of fact that perfect mechanical construction such as is used by the defendants in their windmill output in the external-gear part thereof obviates and prevents any such result, and that there is no appreciable difference between the external and internal gear construction of the defendant's windmills in purpose, operation, function or result between the two styles of gear as shown by these exhibits.

(Signed) OSCAR J. ZIEGLER.

Subscribed and sworn to before me, this 6th day of December, A. D. 1897.

(Signed) FREDERICK C. GOODWIN,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Dec. 6, 1897. S. W. Burnham, clerk.

On the same day, to wit, on the sixth day of December, 1897, there was filed in the clerk's office of said court in said entitled cause, the affidavit of H. A. Toulmin; which said affidavit is in words and figures following, to wit:

Affidavit of H. A. Toulmin.

Affidavit of H. A. Toulmin. Filed Dec. 6, 1897.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & CO. *vs.* STOVER MFG. CO. } In Equity.

STATE OF ILLINOIS, *County of Cook,* } *ss.*:

I, H. A. Toulmin, being duly sworn, depose and say:

That I am solicitor and of counsel for the complainant in the above-entitled cause, and that I was solicitor and of counsel for the same complainant *v.* The Dempster Mill Mfg. Co. in a suit lately pending in the United States circuit court of appeals for the eighth circuit; that in said latter case a certain windmill exhibit was used and known as "Defendant's Windmill," and was before the court as such in the trial of the case.

66 This windmill I have caused to be brought into this court and marked "Complainant's Exhibit Infringing Dempster Windmill." This I do for the purpose of enabling this court to compare the windmill which the court of appeals for the eighth circuit held to be an infringement of the patent on which this suit is based, with the defendant's windmill in this suit. Said case of this complainant against The Dempster Mill Mfg. Co., is the same case which is referred to in the bill of complaint in this cause and the patent in the Dempster case and in this case is the same patent; and further affiant saith not.

H. A. TOULMIN.

Sworn and subscribed before me this 30th day of November, 1897.

L. A. GARDINER,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Dec. 6, 1897. S. W. Burnham, clerk.

On the same day, to wit, the sixth day of December, 1897, there was filed in the clerk's office of said court the affidavit of T. J. Neacy; which said affidavit is in the words and figures following, to wit:

Affidavit of T. J. Neacy.

Affidavit of T. J. Neacy. Filed Dec. 6, 1897.

United States Circuit Court, Northern District of Ills.

MAST, FOOS & Co. } In Equity.
vs.
STOVER MANFG. Co. }

STATE OF WISCONSIN, } ss:
County of Milwaukee, }

T. J. Neacy, being duly sworn, deposes and says that he has been connected with the Filer & Stowell Company, of Milwaukee, in said State, for about 27 years; that during none of said time has said company ever manufactured or sold or dealt in windmills of any kind, but that for about twenty-two years said company has
67 made and sold a machine for sawing wood which is constructed and arranged as shown in the cut hereto attached and marked with his name.

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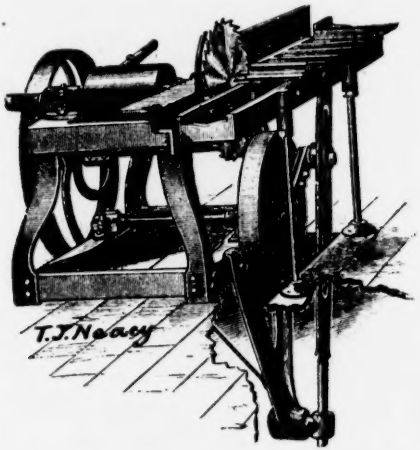

Affiant further says that he makes this statement for the sole purpose of simply making known the truth.

T. J. NEACY.

Subscribed and sworn to before me, a notary public in and for Milwaukee county, State of Wisconsin.

J. L. MONAHAN,
[SEAL.] *Notary Public, Milwaukee Co., Wisconsin.*

(Endorsed:) Filed Dec. 6, 1897. S. W. Burnham, clerk.

68 On the same day, to wit, the sixth day of December, 1897 in the July term of said court, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Order of December 6, 1897.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } 24697.

Now come the parties by their solicitors. Now comes on to be heard the complainant's motion for preliminary injunction herein. The court, after hearing the arguments of counsel, in part, postponed the further hearing of this matter until tomorrow morning.

Afterward, to wit, on the seventh day of December, in the July term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Order of December 7, 1897.

MAST, FOOS AND COMPANY
vs.
STOVER MANUFACTURING COMPANY. } 24697.

Now comes the parties by their solicitors. Now this cause comes on to be heard on motion of complainant by its solicitors for a preliminary injunction. The court after hearing the arguments of counsel in full takes the matter under advisement.

69 On the same day, to wit, on the seventh day of December, 1897, there was filed in the clerk's office of said court the affidavit of H. A. Toulmin, which said affidavit is in the words and figures following, to wit:

Affidavit of H. A. Toulmin. Filed Dec. 7, 1897.

United States Circuit Court, Northern District of Illinois, Northern Division.

THE MAST, FOOS & CO.
vs.
STOVER MANUFACTURING CO. } In Equity.

STATE OF ILLINOIS, } ss.:
County of Cook, }

I, H. A. Toulmin, being duly sworn, depose and say, that I am the solicitor for the complainant in the above-entitled case, and was also the solicitor for the complainant in its suit on patent now in controversy, lately pending in the circuit court of appeals for the eighth circuit, against the Dempster Mill Mfg. Co.

As the regular attorney for Mast, Foos & Co., I notified the Stover Mfg. Co., in 1892, that it was understood they were infringing the patent on windmills now involved in this suit. In reply to my communications I received, through the mail, in the regular course of business, the two letters attached hereto, from the Stover Mfg. Co., one dated Freeport, Ill., Oct. 4, 1892, and signed W. A. Merrifield, sec'y and treas., and the other dated Freeport, Ill., Nov. 1st, 1892, and also signed by W. A. Merrifield, sec'y and treas. These letters have been in my possession, in my office files, from the time of their receipt. I marked each of them with my initials for the purposes of identification. They were in reply to letters written by me to the Stover Mfg. Co., on behalf of Mast, Foos & Co., this complainant.

I further say that in the trial of Mast, Foos & Co. *v.* Dempster Mill Mfg. Co., in the court of appeals at St. Louis, there was presented to the court the mill now brought into this court by the defendant, and marked "Defendant's Exhibit Mast-Foos Mill." This identical mill was shown and explained to the judges in the course of the arguments both by Judge L. L. Morrison and by myself. It

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was not before the court as an exhibit that had been regularly offered, but was brought in by the defendant and unobjected
70 to by me, as I knew it was a correct representation of one of the old-time windmills made by Mast, Foos & Co. It was used before the court by Judge Morrison to show the pitman arrangement used by Mast, Foos & Co., before the Martin patent was obtained and was used by myself to show the court the advancement and improvement made by the Martin patent over this previous type of mill.

Affidavit of H. A. Toulmin. Filed Dec. 6, 1895.

I further say that having been the regular attorney for Mast, Foos & Co. for a number of years, I am familiar with their windmills and other articles manufactured by them. They make two kinds or types of windmills under the Martin patent involved in this suit. In one type they use a single pitman from the internal gear wheel to the actuating rod. This type is shown in their mill now before the court. The other type of internal-gear windmill, of which there is no specimen now before the court, is made with a pitman composed of two parts, instead of one part, and these two parts are like the parts E and D, as shown in this Martin patent. The latter type they have been making and selling extensively, and is specifically covered by claims two and three of this Martin patent, and generally or broadly covered by claim one of this same patent. The other type is covered by claim one of the Martin patent. Such has been the understanding of the complainant and this understanding accords with the decision of the said court of appeals in the Dempster suit.

I further say that the filed herewith and record marked "Complainant's Exhibit Record in Dempster Case," is the record or transcript used before the circuit court of appeals, in said case of Mast, Foos & Co., against the Dempster Mill Mfg. Co.

And further deponent saith not.

(Signed) H. A. TOULMIN.

Sworn to and subscribed before me this 7th day of December, 1897.

——— ———,
Notary Public.

(*Copy of Letter.*)

Stover Manufacturing Co., special machinery, farm implements, light-gray iron castings, and hardware novelties.

FREEPORT, ILL., *Oct.* 4, 1892.

H. A. Toulmin, Esq., Springfield, Ohio.

DEAR SIR: Your favor of 27th ult. is received and noted. We have but recently commenced the manufacture of a wind-
71 mill in which we employ an internal gear. If the use of

Affidavit of H. A. Toulmin. Filed Dec. 6, 1897.

such a device is an infringement upon the rights of your clients, Mast, Foos & Co., we are very willing to discontinue. We are not satisfied, however, that a device of this kind is covered, but will look into the state of the art and if it appears that your clients are vested with any rights for the exclusive use of such device, we will very gladly conform to their wishes.

We have exhibited our mill at some of the fairs, embodying internal gear, which was completed but a short time ago.

Yours truly,

(Signed) W. A. MERRIFIELD,
Sec'y & Treas.

H. A. T.

(*Copy of Letter.*)

Stover Manufacturing Co., special machinery, farm implements, light-gray iron castings, and hardware novelties.

FREEPORT, ILL., *Nov.* 1, 1892.

H. A. Toulmin, Esq., Springfield, Ohio.

DEAR SIR: Answering your favor of 29th ult., will say that we are still investigating the internal gear and are not prepared to say definitely what we are willing to do. Thus far, we have done but little else than experiment with an internal gear and as the windmill season is about over for 1892, and as we have made but one pattern, and this for a size of mill very little in demand, your clients need have nothing to fear for some time to come from this source. We will, however, look into the matter further and let you hear from us later on.

Yours truly,

(Signed) W. A. MERRIFIELD,
Sec'y & Treas.

H. A. T.

(Endorsed:) Filed Dec. 7, 1897. S. W. Burnham, clerk.

72 On the same day, to wit, the ninth day of December, 1897, there was filed in the clerk's office of said court the affidavits of Manuel M. Fisher, James A. Becher, Edward G. Heiner, Adolph Rotterman and James H. Simonton, which said affidavits are on behalf of defendant and are respectively in the words and figures following, to wit:

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United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of Manuel M. Fisher.

Affidavit of Manuel M. Fisher. Filed Dec. 6, 1897.

STATE OF INDIANA,
County of St. Joseph, } *ss:*

Manuel M. Fisher, being first duly sworn, on oath deposes and says:

I am forty-nine years of age. Am president of the Perkins Wind Mill & Ax Company, of Mishawaka, Indiana, with which company I have been continuously connected since its organization in July, 1873. I have been superintendent of the construction department of said company since 1873, having also held the office of vice-president during the year 1896, and having been elected president of said company in January, 1897, which position I now hold. The said Perkins Wind Mill & Ax Company succeeded to the business of P. C. Perkins & Company in the year of 1873, which firm was engaged in the same line of business as the Perkins Wind Mill & Ax Company, and deponent was in the employ of the said firm of P. C. Perkins & Company from March, 1870, until July, 1873, when said Perkins Wind Mill & Ax Company was organized. Deponent further states that his superintendency of the construction department of the said Perkins Wind Mill & Ax Company has caused him to become entirely familiar with the various styles and patterns of windmills manufactured and sold by the company since its first organization, inasmuch as deponent has had to personally approve of the various details of construction which have been employed in such windmills since 1873. That said company in the
73 spring of the year 1884 first decided to put on the market a geared power windmill intended for grinding grain, cutting feed, sawing wood and other heavy work. that such mills were arranged so as to give a rotary motion to the upright driving wheel by placing a large internal-gear wheel on the outer ends of the arms of the spider to which the wheel arms were bolted, said wheel having an internal gear, which internal gear meshed into a small gear wheel placed on the shaft at not quite right angles with the wheel shaft, and at the other end of said shaft a bevel pinion was placed, meshing into a corresponding bevel pinion on the upper end of the upright revolving shaft. Deponent further states that, the first mill manufactured in this way was shipped to *New* York, Nebraska, August 11th, 1884, to F. A. Bidwell; that the second mill of the same construction was shipped October 27th, 1884, to Brandon, Vt., to M. O. Snow, that he finds that June 15th, 1885, one mill of the same construction was shipped to John Hoover, Minneapolis, Minn., and under dates of September 21st, 1885, October 5th, 1885, October

12th, 1885, one mill of the same construction on each date was shipped to Jesse B. Phillips, Mitchell, Dak., which dates and names deponent has taken from the order books and sales books of said Perkins Wind Mill & Ax Company, reference having been made to the original entries made on the dates mentioned, which entries show in every instance that the mills so shipped *has* the internal construction before described. Deponent further states that since said years of 1884 and 1885, including the years of 1886 and 1887, the company of which he has been superintendent has continued to manufacture and sell internal-geared power windmills of the construction before described, but that he has not yet had time to look the various entries up, showing to whom such mills were sold and shipped. Deponent further states that a catalogue of the said Perkins Wind Mill & Ax Company bearing the date of 1889, which catalogue is made a part of this affidavit and marked "Fisher, 1889, Catalogue, Albert Gaylor, notary public," and which catalogue was printed in said year 1889 to his positive knowledge, has on page 8 a wood-cut illustration of a windmill showing the internal-gear construction before described.

Deponent further states that the first order received by the said Perkins Wind Mill & Ax Company, for internal-geared power windmill of the construction before mentioned, was received from R. Warnock, of Salt Lake City, Utah, on March 22nd, 1884, but that patterns for such mill were not completed and that the party ordering the same could not wait, and subsequently canceled said
74 order, said patterns not having been furnished so as to have one of the mills of the construction mentioned ready for shipment before August 11th, 1884, when the first shipment above mentioned was made to F. A. Bidwell, of York, Neb.

Deponent further states that he now has in his possession the original wood patterns which were used for the first internal-gear power windmill made in 1884, which patterns were used until after the year 1890, when iron patterns were made from the same, which iron patterns have since been used, the original wood patterns referred to being made a part of this affidavit and marked "Fisher internal-gear wood pattern, Albert Gaylor, notary public," and "Fisher internal-gear driving-plate wood pattern, Albert Gaylor, notary public."

Deponent further states that the castings for the spiders before mentioned, and which are shown in the wood cut appearing in said catalogue, were cast from an iron pattern, which iron pattern has been used for said purpose since the year 1876, the same spider having been previously used for wood sixteen-foot pumping mills, which iron pattern is here produced and made a part of this affidavit, the same being marked "Fisher spider pattern, Albert Gaylor, notary public." That the three parts last mentioned were so made as to be connected together so as, in fact form one piece of casting as is shown in the illustration in said catalogue before mentioned. The deponent has in his possession an iron pattern from which the gear wheels were cast for said mills which meshed with said internal-gear wheel, said iron pattern being the original from which said

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wheels have been cast since 1884, which pattern is made a part of this affidavit and marked "Fisher small outside gear-wheel pattern, Albert Gaylor, notary public."

Deponent further states that the said Perkins Wind Mill and Ax Company has illustrated in all of its catalogues since 1886 the same construction of mill as is shown by the wood cut appearing on said page 8 of the catalogue of 1889, but that the deponent has not been able, because of the limited time which he has had to give to this matter, to find any catalogue of an earlier date than the year 1889, but deponent has found a number of catalogues of later date and here refers to catalogues for 1890 and 1891 which show on pages 8 and 15 respectively, the same cut of internal-gear power mill, as is shown on page 8 of the catalogue of 1889, which further catalogues are made a part of this affidavit and marked "Fisher 1890 catalogue, Albert Gaylor, notary public," and "Fisher 1891 catalogue, Albert Gaylor, notary public."

75 Deponent further states that since the year 1885 and during the years of 1886 and 1887, as well as during subsequent years, the said Perkins Wind Mill & Ax Company has sold mills of the construction before mentioned to the number of several hundred, the sales of such mills made during the years of 1886 and 1887 numbering at least twenty, the demand for such mills not comparing with the demand for the pumping mills of the manufacture of the Perkins Wind Mill and Ax Company, said internal-geared mills being designed only for heavy use and occasional customers, most all orders for the same during the years of 1884, 1885 and 1886 coming principally from parties extensively engaged in stock-raising, which fact explains why none of the orders referred to during 1884 and 1885 are for mills sold in the vicinity of Mishawaka, because stock-raising as well as other work requiring such class of mills is not carried on in this vicinity. That deponent has just found the bill of Joseph A. Minturn of Indianapolis, Indiana, for the designing and engraving of the cut of the power-geared mill as shown on said page 8 of said catalogue of 1889, said bill being dated June 24th, 1886, and that portion of the bill relating to said cut for said geared mill reads as follows: "To designing and engraving geared mill $25.00;" that said bill from the said Joseph A. Minton, which includes several other items is made a part of this affidavit and marked "Fisher Minturn bill, Albert Gaylor, notary public."

Deponent further states that he is positive that the bill of the said Joseph A. Minturn of the date last mentioned was rendered for the cut of said internal-geared power mill, such as before mentioned because said Perkins Wind Mill & Ax Company has never used any other cut in their catalogues showing an internal-geared power mill made of wood, excepting the cut in question, the only other internal-geared windmills ever shown by cuts in such catalogues being the steel power mills of said company's manufacture since 1893.

MANUEL M. FISHER.

Subscribed and sworn to before me this 8th day of December, A. D. 1897.

ALBERT GAYLOR,
[SEAL.] *Notary Public.*

76 INDIANAPOLIS, *June* 24, 1886.

Perkins Wind Mill Co., Mishawaka, in acc't with Jos. A. Minturn, Indianapolis, Ind.

To designing and engraving fancy scene	$46 00
" " grand mill	25 00
" " " sectional view of running gears	20 00
" " " derrick	16 00
" engraving 5 tanks	20 00
" electrotyping job	11 00
	$138 00

(Endorsed:) United States circuit court, northern district of Illinois. Mast, Foos & Co. *v.* Stover Mfg. Co. Fisher Minturn bill. Albert Gaylor, notary public. (Seal.)

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS COMPANY, Complainant,
vs.
THE STOVER MANUFACTURING COMPANY, Defendant. } In Equity.

Affidavit of James A. Becher.

Affidavit of James A. Becher. Filed Dec. 6, 1897.

STATE OF INDIANA, }
County of St. Joseph, } *ss:*

James A. Becher, being first duly sworn, on oath states as follows:

I am forty-eight years of age; and by occupation am a machinist; have been in the employ of the Perkins Wind Mill and Ax Company of Mishawaka, Indiana, a large portion of the time since the year 1872. I have heard read the affidavit of Manuel M. Fisher, relating to the construction of internal-gear power windmills made by the said Perkins Wind Mill & Ax Company, since the year 1884; that I have personal knowledge of the facts stated by the said Fisher and know the same to be true; that I know of the manu-
77 facture and sale of windmills by the said Perkins Wind Mill and Ax Company, with the internal-gear construction illustrated on page 8 of the catalogue of said company of the year 1889, since the year 1885; that said company was building mills of this construction during the year 1885 and had commenced building the same previous to that date.

That I was absent from Wishawaka and out of the employ of the

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said company for three years, returning to the employment of said company in 1885, when I found said company to be manufacturing said internal-geared power windmills.

Deponent further states that he has personal knowledge of the use of the various patterns identified by Mr. Fisher in his affidavit, since said year 1885, and that he has personal knowledge of the manufacture and sale of a considerable number of said power windmills having the internal-gear construction, shown by said patterns and described in the affidavit of Mr. Fisher during the years of 1885, 1886 and 1887, as well as since that date said mills having been made and sold to a considerable number, principally for heavy work such as is required for grinding feed, shelling corn, sawing wood, etc.

JAMES A. BECHER.

Subscribed and sworn to before me this 8th day of December, A. D. 1897.

ALBERT GAYLOR,
Notary Public.

[SEAL.]

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of Edward G. Heiner.

Affidavit of *James A.* Heiner. Filed Dec. 9, 1897.

STATE OF INDIANA,
County of St. Joseph, } ss:

Edward G. Heiner, being first duly sworn, on oath states as follows:

I am twenty-seven years of age; a machinist by trade, have been in the employe of the Perkins Wind Mill & Ax Company, of Mishawaka, Indiana, since the year 1884, with the exception of eleven months during the year 1894. Deponent further states that
78 he has heard read the affidavit of Manuel M. Fisher, relating to the manufacture and sale by the Perkins Wind Mill and Ax Company of the internal power gear windmills as far back as the year 1884. That deponent has personal knowledge of the commencement of the manufacture of windmills of this description by said company in the year 1884, and has knowledge of the manufacture of a considerable number of said windmills, such as described in the affidavit of the said Fisher, during the years 1885, 1886 and 1887. That the facts stated in the affidavit of the said Fisher are true to the personal knowledge of said deponent, as far as they relate to the manufacture of such windmills.

That the several patterns identified in the affidavit of said Fisher, as having been used for the manufacture of said windmills since

the year 1884, *was* known to deponent to be the original patterns which have been used by the Perkins Wind Mill & Ax Company, for the making of said windmills since said year of 1884.

EDWARD G. HEINER.

Subscribed and sworn to before me this 8th day of December, A. D. 1897.

ALBERT GAYLOR,
Notary Public.

[SEAL.]

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of Adolph Rotterman.

Affidavit of Adolph Rotterman. Filed Dec. 9, 1897.

STATE OF INDIANA,
County of St. Joseph, } *ss:*

Adolph Rotterman, being first duly sworn, on oath deposes as follows:

I am forty-four years of age. Am by occupation a moulder. That I am now employed by the Perkins Wind Mill & Ax Company, of Mishawaka, Indiana, at the present time. That I first commenced working for said company in April, 1884, and con-
79 tinued to so work for about four years. That I have heard read the affidavit of Manuel M. Fisher, concerning the manufacture and sale of external-gear power windmills by said Perkins Wind Mill & Ax Company, commencing with the year 1884. That the patterns identified in the affidavit of said Fisher are the identical and original patterns used for the casting of said internal-gear power mills when the manufacture of such mills was commenced in said year of 1884, which patterns have since been used for said mills. Deponent further states that he has personal knowledge of the making of considerable number of said internal-gear power windmills during the years 1884, 1885, 1886 and 1887. That after working for about four years, commencing with April, 1884, that deponent left the employ of said company and had other employment until 1893, when he was again employed by said Perkins Wind Mill & Ax Company.

ADOLPH ROTTERMAN.

Subscribed and sworn to before me this 8th day of December, A. D. 1897.

ALBERT GAYLOR,
Notary Public.

[SEAL.]

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United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & COMPANY, Complainant,
vs.
THE STOVER MFG. COMPANY, Defendant. } In Equity.

Affidavit of James H. Simonton.

Affidavit of James Simonton. Filed Dec. 9, 1897.

STATE OF INDIANA, }
County of St. Joseph, } *ss:*

James H. Simonton, being first duly sworn, on oath states as follows:

I am fifty-three years of age. Am by occupation a painter. Have been in the employ of the Perkins Wind Mill & Ax Company continuously since the year 1878. That said company in or about the year of 1884 commenced the manufacture and sale of a power windmill intended for heavy work, and having an internal-gear construction. That he painted the first mills of this con-
80 struction made by said company, and had personal knowledge of the manufacture and sale of a considerable number of such mills prior to the year 1888, all of which mills were painted either by deponent or by others under his charge in the paint shop of said company, which paint shop has always been under the charge of deponent. Deponent further states that he has examined the several patterns referred to in the affidavit of Manuel M. Fisher, which affidavit he has heard read, and the facts of which affidavit are to his knowledge true, and that the patterns referred to in said Fisher's affidavit show the same construction of internal-gear windmills as made by said Perkins Wind Mill & Ax Company since the year 1884, and as are still being made, the same style or pattern of mill and the description given in the said Fisher's affidavit having been made during all the years from 1884 down to the present date.

JAMES SIMONTON.

Subscribed and sworn to before me this 8th day of December, A. D. 1898.

ALBERT GAYLOR,
Notary Public.

[SEAL.]

(Endorsed:) Filed Dec. 9, 1897. S. W. Burnham, clerk.

Afterwards, to wit, on the thirteenth day of December, in the July term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Order of December 13, 1897.

THE MAST, FOOS & COMPANY
vs.
THE STOVER MANUFACTURING CO. } 24697.

The court having considered and being fully advised leave is hereby given defendants to file within two weeks, affidavits relating to the use of the Perkins windmill of Wishawaka, Indiana and to the complainant one week thereafter to reply to the same, upon defendants' giving a bond to be approved by the court in the sum of $5,000 conditioned to pay all damages on account of infringement during the interval between this time and the disposition of
81 the motion for preliminary injunction. Said bond to be in addition to the deposit heretofore made with the clerk of this court, or in lieu thereof, to make additional deposit of $3,000.

Afterwards, to wit, on the fourteenth day of December, 1897, came Stover Manufacturing Company, as principal and Gilbert B. Shaw, as surety and filed in the clerk's office of said court in said entitled cause a certain bond, which said bond is in the words and figures following, to wit:

Bond.

Bond. Filed Dec. 14, 1897.

In the Circuit Court of the United States for the Northern District of Illinois.

MAST, FOOS & COMPANY, Complainant,
vs.
STOVER MANUFACTURING COMPANY, Defendant. } In Equity.

Know all men by these presents, that we, Stover Manufacturing Company, a corporation organized under the laws of the State of Illinois, and having its principal office and place of business at Freeport, in said State, in the district aforesaid, as principal, and Gilbert B. Shaw, as sureties, are held and firmly bound unto the above-named Mast, Foos & Company, in the penal sum of five thousand dollars ($5,000.00) lawful money of the United States, for the payment of which, well and truly to be made, we bind ourselves, and each of us, our successors, heirs and legal representatives, jointly and severally, firmly by these presents.

Sealed with our seal- and dated the 14th day of December, A. D. 1897.

The condition of the foregoing obligation is such that whereas in said suit above entitled, begun and now pending in the circuit court of the United States for the northern district of Illinois, the complainant has filed therein its motion for a preliminary injunction, and the court by order duly entered in said cause on, to wit, the

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13th day of December, A. D. 1897, has postponed the hearing of said injunction motion for the purpose of allowing the above-named defendant, Stover Manufacturing Company, to file additional affidavits showing why said injunction should not be granted, and has allowed the complainant a further time wherein to file affidavits in reply.

82 Now, if the said Mast, Foos & Company shall well and truly pay, satisfy and discharge any judgment or decree which may be entered against it herein by reason of the infringement of the patent named in said bill between the date hereof and the decision of this court on said motion for injunction, then this obligation shall be void; otherwise, the same shall be and remain in full force and effect.

STOVER MFG. CO.,
By W. A. MERRIFIELD,
Sec'y & Treas.
GILBERT B. SHAW. [SEAL.]

Approved.
S. W. BURNHAM, *Clerk.*

(Endorsed:) Filed Dec. 14, 1897. S. W. Burnham, clerk.

Afterwards, to wit, on the twenty-seventh day of December, 1897, there was filed in the clerk's office of said court the affidavit of Manuel M. Fisher, which said affidavit is in words and figures following, to wit:

Affidavit of Manuel M. Fisher. Filed Dec. 27, 1897.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } In Equity.

UNITED STATES OF AMERICA, }
Northern District of Illinois, } ss:

I, Manuel M. Fisher, being duly sworn, state that I am the same M. M. Fisher who have before made separate affidavits in the above-entitled cause; that after making the first affidavit in said cause, and which I understand was filed and used by the defendants, I was called upon by Mr. H. A. Toulmin who represented himself to be the attorney for Mast, Foos & Company, and who claimed that great injury and injustice had been done the complainant by my former affidavit. I know that the former president of this company, Mr. Palmer C. Perkins, now deceased, whose successor I am, and who was president of my company for a quarter of a century, prior to his death in 1896, was for many years a warm and

83 personal friend of Mr. Mast, the principal founder of Mast, Foos & Company, the complainant, and I know that Mr. Perkins was careful during his lifetime not to copy or follow any

windmill construction of the complainant in this case that would give offense to Mr. Mast or his company, and I know that Mr. Perkins considered the difference between the particular form of internal gear exhibited by the Martin patent in suit and referred to in my second affidavit, and an internal gear to be used for the same purpose, was without any particular importance or moment in windmill manufacture and for this reason and the reason of the friendship existing between our former president Mr. Perkins, and the complainant, and for the more particular reason hereafter given, we never adopted the precise internal-gear construction and arrangement exhibited by the Martin patent, in any of our windmill output.

The affidavit which I gave Mr. Toulmin was entirely written out by Mr. Toulmin himself in his own hand, after talking with me, and I did not dictate the language of the affidavit, and the form and mode of expression and arrangement of its subject-matter is entirely the production of Mr. Toulmin, and I signed it after it had been so written out and herewith attach a letter-press copy of this original affidavit to my present affidavit, making it a part thereof.

At the time I gave my first affidavit to Mr. Towle, I was not shown the Martin patent and no attempt was made to post me as to the merits or demerits of the Martin patent, and I was simply asked to identify and make certain and positive the fact of the manufacture and sale by us and use by others of a particular type of internal-gear windmill as disclosed by my first affidavit, and the first that I saw of this Martin patent in this connection and knew of it, was when it was exhibited by Mr. Toulmin and attempted to be explained to me by him. I have since the giving of my affidavit to Mr. Toulmin made a much closer study and scrutiny of this Martin patent. I did not intend to state in my affidavit given Mr. Toulmin that the windmill mechanism disclosed by this Martin patent was not adapted to and could not be used in a power mill. It is perfectly evident upon a close study of this Martin patent, that I have now given, that Martin contemplated his windmill mechanism to be used in what is technically known as a power mill, as well as a water-pumping windmill. Martin's drawing shows his whole invention without indicating in any way the peculiar use with which it is to be employed, but the specifications of his patent make it absolutely certain that Martin intended his invention to apply
84 to all purposes and to all appliances in connection with which a windmill is ever used. This fact is made certain by the following quotation from his patent, beginning line 73 to 77, inclusive.

"The actuating rod O connects with the pitman D in any approved manner at P and extends down from the tower *to the appliances to be operated*—say a pump."

In my affidavit given to Mr. Toulmin where I stated "I know of no other internal-gear and pitman arrangement like that referred to in this Martin," I never saw a device incorporated in a windmill like the device of this Martin patent and I do not believe that such a device would be commercially and practically acceptable to the

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trade. The triangular pitman D exhibited in this Martin patent is an exceedingly awkward and unnatural mechanical attempt to utilize mechanical forces and obtain desired results, and for this reason, if for any other, as referred to in a former part of this affidavit, neither Mr. Perkins nor his company would have ever adopted or followed this Martin patent in windmill construction. I believe that our windmill construction is superior in every respect to the windmill construction of the complainant, and I would not change or adopt the complainant's construction under any circumstances.

I have examined the exhibit in this case representing the windmill construction of the defendants herein, wherein there is no triangular pitman and wherein the operative force is directly communicated by direct straight-bar connection between the internal gear and the actuating rod, and in my opinion, this defendant's mill is widely variant from this Martin patent in this respect. I know that the question of gearing up or gearing down to change or vary the speed on the wrist pin is one merely of choice or selection depending on the particular kind of work you expect the windmill to accomplish. In pumping water it is desirable to gear down. In the application of the power of the wind wheel and its connections to appliances for various operations, such as grinding grain, &c., as well as pumping, the mill should be geared up to increase speed. All this is mere matter of detail and selective choice upon the part of the manufacturer, depending upon the class of work to be done by the mill. It is also equally obvious that in one instance, such as pumping, a reciprocating motion is the motion to be employed, of course, and that on the other hand, when you attempt to ally the wind wheel with appliances for various operations such as grinding and sawing wood, that a rotary motion is the motion to be employed and utilized. In many types of windmills, both the rotary and reciprocating motions are employed where the main part of the mill is the pumping of water, the actuating rod is given a reciprocating motion and frequently this reciprocating motion is converted into a rotary motion. In other types of windmills, the actuating rod is given in the first instance a rotary motion, and this rotary motion is then converted into a reciprocating motion for pumping, thus the Perkins windmill is called a "power mill" because the main purpose and object is to use the windmill instead of an engine or horse-power for driving various machines such as feed-cutters and the like, but in other instances the Perkins windmill is arranged so that the rotary motion is converted into reciprocating motion and this reciprocating motion is used for pumping water.

85

Affidavit of Manuel M. Fisher. Filed Dec. 26, 1897.

I have examined the affidavi made in this case by Robert Doyle of Watseka, and I know that my company sold the mill identified by this affidavit to Mr. Doyle on November 19, 1885, and that all of the matters and facts stated by Mr. Doyle in connection with the erection of that mill and its purchase by him of us are true in every particular, and this mill is simply one of a number of such mills

that were manufactured and sold by our company in various parts of the United States prior to 1888, and that all of these parts are shown and made certain by the books of my company.

(Signed) MANUEL M. FISHER.

Subscribed and sworn to before me this 27th day of December, A. D. 1897.

(Signed) FREDERICK F. GOODWIN,
[SEAL.] *Notary Public.*

United States Circuit Court, Northern District of Illinois.

THE MAST, FOOS & CO.
vs.
STOVER MANUFACTURING COMPANY. } In Equity.

STATE OF INDIANA, }
County of St. Joseph, } *ss.*:

I, M. M. Fisher, being duly sworn, depose and say that I am the same M. M. Fisher who a few days ago made an affidavit in this cause at the request of Mr. Towle of Chicago.

I further say that I have been connected with the Perkins Wind Mill and Ax Co., for about 27 years, and am familiar with all the goods this company has manufactured during such time. In respect to windmills, I further say that until 1884, this company had not made any form of geared mill, but that in that year said company began to make and sell, and has since continued to make and sell, windmills like that shown in the attached cut.

86 Affidavit of Manuel M. Fisher. Filed Dec. 6, 1897.

This windmill is a power mill, not a pumping mill, and is designed to produce rotary motion, and not reciprocating motion, which classes of motions are known and regarded in the mill art and mill business as distinct and wholly different things, requiring different mechanical devices and a different arrangement of such different devices.

In this power windmill, shown in this cut, this company uses not pitman and produces no reciprocating motion; and employs external gears, which are necessary to this organization.

In comparing this power windmill of my company with a copy of patent No. 433,531, dated August 5, 1890, to S. W. Martin, I notice the differences above mentioned between power and pumping windmills, and also that this Martin patent gears down to reduce speed on the wrist pin, while in my company's said power windmills we gear up to increase speed on our external driving gear, to give greater speed to our rotary shaft. In our said mill, also, there is no pitman and no combination of a pitman with an internal gear and reciprocating rod.

In 1892 my company thought of making a pumping windmill with an internal-gear and pitman combination to produce recipro-

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cating motion, but our Mr. Perkins, now deceased, reported that he would not do so after examining a windmill patent covering such a combination as disclosed by this Martin's patent, but whether the patent he so examined was this Martin patent itself, I cannot now say.

We then adopted an external-gear arrangement for our pumping windmill; and so have never used the internal gear combination referred to above.

I make this affidavit for the purpose of stating the facts as they exist, merely adding that I know of no other internal-gear and pitman arrangement like that referred to in this Martin's, and that I have no interest in this case whatsoever, and further I saith not.

(Signed) MANUEL M. FISHER.

87 Subscribed and sworn to before me, a notary public, this 14th of December, 1897.

[SEAL.] (Signed) JOHN NILES,
Notary Public.

(Endorsed:) Filed Dec. 27, 1897. S. W. Burnham, clerk.

On the same day, to wit, the twenty-seventh day of December, 1897, there was filed in the clerk's office of said court the affidavit of Robert Doyle, which said affidavit is in words and figures following, to wit:

Affidavit of Robert Doyle. Filed Dec. 27, 1897.

CITY OF WATSEKA,
County of Iroquois, State of Illinois, } *ss:*

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING CO.

Robert Doyle, being duly sworn, deposes and says, that he is sixty years of age, and by occupation, attorney-at-law, and resides in the city of Watseka, county of Iroquois, and State of Illinois, and has so resided for thirty years last past; that in the year 1885, September or October of that year, this affiant purchased of the Perkins Wind Mill Company, of Mishawaka, Indiana, an internal-gear windmill, to be used on my farm, part of which is in said city above mentioned, for the purpose of cutting, grinding and elevating feed and pumping water; that on November 24th, 1885, he paid the freight on said windmill from Mishawaka, Indiana, to the city of Watseka. I hereto attach to this affidavit a copy of the entry as originally made on my pocket cash book, and make these entries a part of my affidavit, and mark them: "Robert Doyle Exhibit Freight Paid on Perkins 1885 Windmill."

"ROBERT DOYLE EXHIBIT FREIGHT PAID ON PERKINS 1885 WINDMILL."

88 *Copy of Entries Taken from My Pocket Cash Book for the Year 1885 and Dates of Each Also, 1886-'88.*

Nov. 24.	P'd fr't on mill from Englewood.....	$3 15
Nov. 24.	P'd fr't on mill to Englewood	4 35
Dec. 8, 1885.	P'd fr't on tools of Perkins	1 35
Dec. 17, 1885.	P'd Perkins Mill Co.	50 00
M'ch 22, 1886.	P'd Perkins Mfg. Co., ch'k	218 41

Affiant further states that in December, between the 1st and the 15th, the said windmill was erected on his farm in the said city, county and State; that the said windmill performed the work in a satisfactory manner from the time it was erected until November, 1890, without repairs or additions thereto of any kind whatsoever, except in June, 1888, a heavy gale of wind which did considerable damage to trees and to outhouses in the neighborhood of this windmill, and also removed some slats in the 18-foot wheel of said windmill, which slats were replaced by me, and nothing more was ever done to the windmill in the way of repairs or additions thereto during the remainder of the time it was in use on my farm.

Affiant further states that in November, 1890, it became necessary to replace said windmill with an engine, as his work at that time had increased to some considerable extent, during the year 1890 we had so little wind that I found it impossible to do the additional work required, not by reason of the incapacity of the windmill when there was sufficient wind, but from the scarcity of wind during that year.

Affiant further states that this windmill was stored in his barn, and he now finds it in perfect condition in all its parts and in the same condition, the natural wear and tear excepted, that it was in when he purchased it in the year 1885.

Affiant further states, that in addition to his grinding and cutting mills, which were run by power from the said windmill from the main or line shaft, there was a connection by belt and pulley to a short shaft, on one end of which was attached an eccentric which gave a reciprocating motion to the pump rod; that this pump and machine connections are represented by the following cut hereto attached and made a part of this affidavit, marked "Exhibit B."

(Here follows cut marked p. 88*a*.)

Affiant further states, that at the time he purchased the said Perkins windmill it had a large internal-tooth gear secured to the arms of the spider of the windmill with an external-tooth pinion meshing into the teeth of the internal gear, driving the bevel gear which drove the bevel pinion for rotating the vertically arranged
89 power shaft, which drove the main or line shaft and the said short shaft with the eccentric attached to the pump rod.

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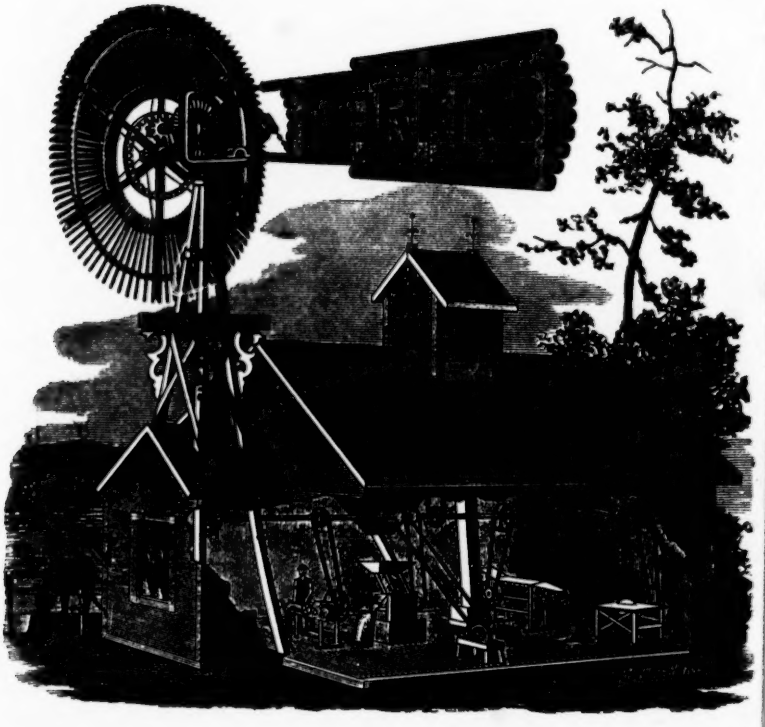
No. 149
Mast, Foos & Co } p. 88a
Stover Mfg. Co.



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Affiant further states that he has marked the above-mentioned mill and castings "Robert Doyle's Exhibit Perkins 1885 Windmill. Emily Cote, notary public."

(Signed) ROBERT DOYLE.

Subscribed and sworn to before me, this 20th day of December, A. D. 1897.

(Signed) EMILY COTE,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Dec. 27, 1897. S. W. Burnham, clerk.

On the same day, to wit, the twenty-seventh day of December, 1897, there was filed in the clerk's office of said court the affidavit of Wm. D. Burkett, which said affidavit is in words and figures following, to wit:

Affidavit of Wm. D. Burkett. Filed Dec. 27, 1897.

CITY OF WATSEKA, } ss.:
County of Iroquois, State of Illinois, }

In the United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY }
vs.
STOVER MANUFACTURING CO. }

William D. Burkett, of lawful age, being duly sworn, deposes and says, that he is a resident of the city of Watseka, Iroquois county, Illinois, by occupation a carpenter, and that he is well acquainted with Robert Doyle; that in the summer, 1885, he worked for said Doyle, assisting in building his barn and tower, on which was placed a Perkins internal-gear windmill, manufactured in Mishawaka, Indiana, that in the fore part of December, 1885, said windmill arrived at said Robert Doyle's farm and was placed on the tower that affiant assisted in making; that the said windmill was of three-and-a-half or four horse power eighteen-foot wheel, with a large internal tooth gear secured to the arms of the spider of the wind wheel, with an internal-tooth pinion meshing into the
90 teeth of the internal gear and driving the bevel gear which drove the bevel pinion for rotating the vertically arranged power shaft which drove the main line or shaft to which was attached by belts and pulleys, cutting, grinding and elevating machines, also a pump for pumping water, the pump being attached to the main shaft by belt which was attached to the short shaft, at one end of which was an eccentric which drove the pump rod, the arrangement of which was very similar to the Perkins windmill cut attached to the affidavit of Robert Doyle.

This affiant further states, that he has frequently seen the windmill and its attached machinery running, and has heard Mr. Doyle say that it did his work satisfactorily; that he also remembers of

the gale of wind in June, 1888, which removed from the large wind wheel of said windmill some of the slats and broke some of the braces on the eighteen foot wind wheel; that soon after, in July, I think, I assisted in repairing said wheel, and have this day examined the Perkins windmill now in the possession of Robert Doyle, and find it in the same condition, natural wear and tear excepted, as when it arrived on his farm in 1885, and the repairs that were made on the windmill in July, 1888; that there has been no additions thereto other than these repairs above mentioned since I first saw it in 1885.

Affiant further states that he has marked the above-mentioned windmill "William D. Burkett Exhibit 'A' Perkins 1885 Windmill."

And further affiant saith not.

(Signed) WILLIAM D. BURKETT.

Subscribed and sworn to before me, this 21st day of December, A. D. 1897.

(Signed) EMILY COTE,
[SEAL.] *Notary Public.*

(Endorsed:) Filed Dec. 27, 1897. S. W. Burnham, clerk.

91 On the same day, to wit, the third day of January, 1898, there was filed in the clerk's office of said court the affidavit of Peter T. Coffield, which said affidavit is in the words and figures following, to wit:

Affidavit of Peter T. Coffield. Filed Jan. 3, 1898.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY } *v.* STOVER MFG. COMPANY. } In Equity. No. —.

STATE OF OHIO, } *County of Montgomery,* } *ss:*

I, Peter T. Coffield, being duly sworn, depose and say that I reside in Dayton, Montgomery county, Ohio, and am superintendent of the gas-engine manufacturing department of the W. P. Callahan & Company, of that place, which gas engine being so made was invented by me; I have invented and patented since 1881 four windmills; among them patent No. 273,226, Feb. 27th, 1883; which was presented to this court in this case when the injunction was first applied for, as I am informed; and since the year 1880 I have been employed in windmill factories and have been superintendent of one of such establishments, namely the Iron Monitor Wind Engine Company, of Troy, Ohio, to whom I sold a windmill patent on a mill invented by myself, which was the mill they manufactured. I have also invented and patented various

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pumps and have been superintendent of a pump-manufacturing establishment which made my said pumps, namely, the Superior Pump Company, of New Carlisle, Ohio, so I am able to say that I have been connected with the manufacture of pumps to be operated by windmills, and the manufacture of windmills designed to operate pumps. I have seen and understand the power mill made at Mishawaka, Indiana, and known as the Perkins windmill, and I have also frequently seen and understand the Martin pumping windmill made by Mast, Foos & Co., in which there is a combination of a pinion, an internal-gear wheel, a pitman and a reciprocating actuating rod, as shown in letters patent No. 433,531, dated August 5th, 1890, with which I am also familiar.

As between this Martin patent and this Perkins windmill, I find among others, the following practical and mechanical differences:

92 The only object and result in using the internal gear in the Perkins mill was to obtain increased rotary speed, without any reference whatever to reciprocating motion.

In the Perkins mill there are four external-gear wheels, two at the top of the tower and two near the bottom. These external-gear wheels are between the internal-gear ring and the ultimate driving shaft in the Perkins mill. Any attempt, therefore, to get reciprocating motion from such ultimate driving shaft will transfer back through these external-gear wheels the "chugs" incident to a reciprocating motion loaded down with weight and the inertia to overcome at the end of each stroke, which chugs were suffered in windmills before the Martin invention and which he overcame by his combination. The windmill art therefore gained no advantage in this important particular by means of the Perkins internal-gear ring over the difficulties before existing in all windmills having gearing. Again, the Perkins and Martin arrangement are so far different that there is no place for and no possibility of using external gears, such as Perkins uses, in the Martin combination, while if those external gears were removed from the Perkins combination the Perkins mill would not work at all.

In this Perkins mill the internal gear contrary to the fact in the Martin combination, drives the smaller pinion. This increases Perkins' rotary motion so much that before he can operate a pump he has to introduce further mechanism for reducing this increase of speed, so that his use of the internal gear is detrimental to the production of the slowed-down reciprocating motion ultimately necessary in working a pump; and this additional mechanism, together with the external gear already in the Perkins mill, destroys all possible advantages to be derived from an internal-gear wheel, when reciprocating motion is required to be gotten.

In the Martin and Perkins mills the very objects sought were directly different. Perkins merely used his internal gear to speed up along with external gears so as to get a high rotary motion on a horizontal rotating shaft. Martin, on the contrary, did not wish to speed up, did not wish to produce rotary motion, but reciprocating motion, and this he wished to get without "chugs," due to

passing over two dead centers in every revolution. Perkins does not deal with dead centers. Martin had to contend with dead centers. I see in the two things, from the standpoint of a practical windmill man, and an inventor in this line, two things as different as can be, both in a mechanical sense and in a very practical
93 sense. The Perkins mill is heavy and full of parts, and costs several times as much to build as the Martin mill, and is essentially for running grinding mills, feed-cutters and other rotary implements where high rotary speed is needed; while the Martin mill is simple, is compact and is wholly for producing reciprocating motion which would not be used in running such rotary implements.

Martin uses nothing but the wind-wheel shaft, the internal gear and its pinion, a pitman and reciprocating rod. The Perkins mill is not simple, but is complicated, and has a number of expensive and cumbersome parts which are avoided by the Martin invention.

In Perkins the vertical shaft is superfluous for pumping purposes and adds to the weight and cost, and has to be held by bearings at intervals from the top of the tower down. Then this vertical rotary shaft has to have an internal gear at its lower end to drive a horizontal shaft, which latter for pumping purposes, is unnecessary, except as made so by the use of this vertical rotary shaft and these external-gear wheels. It is of no use to put an internal gear at the top of the mill if these external gears, in the Perkins mill, are then to be added, for this would be a mechanical paradox. Martin dispenses with numerous parts found in the Perkins mill, namely, this vertical rotating shaft, the two external bevel gears at the top of the tower, the external gears at the lower end of this shaft, the horizontal shaft and its external gear, and Martin dispenses with all this weight and cost and all the friction they produce.

I further say that any attempt to connect and work a force-pump (and I am an inventor of and have secured patents upon force-pumps) by this Perkins windwill necessitates, as stated above, reducing the high speed of the horizontal shaft at the bottom of the vertical shaft, and to do this still another shaft, two pulleys and a belt must be added to prevent moving the pump rod too fast for the successful operation of the valves. Furthermore, the up-and-down strokes of such pump rod will produce and send through the whole Perkins mill, by reason of its external gear wheels, the very jars or chugs which the Martin combination completely avoids.

(Signed) PETER T. COFFIELD.

Subscribed and sworn to before me this 31st day of December, 1897.

(Signed) B. F. HENLUY,
[SEAL] *Notary Public, Clark County, Ohio.*

(Endorsed:) Filed Jan'y 3, 1898. S. W. Burnham, clerk.

94 On the same day, to wit, the third day of January, 1898, there was filed in the clerk's office of said court the affidavit

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of Chas. A. Bauer, which said affidavit is in words and figures following, to wit:

Affidavit of C. A. Bauer. Filed Jan. 3, 1898.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MFG. CO. } In Equity. No. —.

STATE OF OHIO, }
County of Clark, } *ss.*:

I, Charles A. Bauer, being duly sworn, depose and say that I reside in Springfield, in said county and State; that I am a mechanical engineer and have persued mechanical occupations as directing and consulting engineer in various mechanical establishments, and for the past fifteen years I have been, and am now, general manager of the Warder, Bushnell & Glessner Company, a corporation capitalized at $3,000,000, having an extensive plant covering about 30 acres and generally employing from 1,000 to 1,500 men. I further say that I understand letters patent 433,531, dated August 5th, 1890, to S. W. Martin, for windmills, and also the Perkins windmill shown in the cut attached hereto. I have compared these two machines so shown from the standpoint of a practical man constantly engaged in the practical work of building general classes of machinery, including mowers, reapers and binders in my said position of general manager of the Warder, Bushnell, Glessner Company, of which I am a member, and in which machines particularly in binders, gearing enters largely.

My comparison of these Martin and Perkins structures and my careful consideration of them, have resulted in the following conclusions:

In the first place, when one institutes a comparison of two machines, the first thing to consider is, what is to be accomplished; next, how it is to be accomplished and what mechanisms or groups of devices are used in the respective apparatus.

Looking at the Martin and Perkins machines for what is to be accomplished, I find that Martin was seeking to accomplish
95 or produce reciprocating motion by applying rotary power at the upper end of a high tower, called a windmill tower, and to utilize that motion a long distance from the point of its application, namely, at the bottom of the tower.

Then I find that Perkins was seeking to take rotary motion from a high plane, thence to carry this rotary motion down to a lower plane, and then to carry it off again in a horizontal plane.

The first fact I therefore arrive at is that the two men were working in different fields of motion in the sense of mechanics, and were working for different objects.

This disposes of one primary factor in investigations of this kind.

The next thing is how these different objects are accomplished and by what mechanism. Martin employs a compact, simple group of devices. This group includes a pitman, an internal-gear wheel, which performs the double office of a gear wheel and a crank, a pinion on the windmill shaft which meshes with the internal-gear wheel, and through it ope*ar*tes, and slows down the motion of the pitman, and lastly, a long reciprocating rod or bar connected to the pitman at its upper end and designed to connect directly with the pump at the lower end. This group includes all external-gear wheels, which exclusion is one of the purposes Martin had in view. The result is a compact simple machine, without a single feature that could mechanically be dispensed with.

Returning to the Perkins machine, I find that he accomplishes his purpose to produce rotary motion, as I have stated, by another group, and a different group, of mechanical devices. He employs an internal-toothed ring which speeds up a pinion. This pinion has an external-toothed miter-gear wheel on its shaft which turns in a vertical plane. Then he has an upright shaft with an external-toothed pinion which meshes with this external-toothed miter gear. Thus this pinion rotates in a horizontal plane. This long upright shaft carries, at its lower end, another external-toothed pinion or gear wheel. Then Perkins introduces another long horizontal shaft, from which he takes off rotary motion. This lower horizontal shaft also has an external-toothed pinion or gear wheel, and which meshes with the one on the lower end of the upright shaft.

The second fact that I therefore arrive at is that the two groups of mechanisms are different. Perkins includes, and cannot operate without, the very external gears which Martin eliminated. Perkins does not move the long rod up and down, and if he did it
96 would not rotate his lower horizontal shaft; and if he did its pinion would not keep in mesh with the upper miter gear. Nor do I lose sight of the fact that if Perkins takes rotary motion from this lower horizontal shaft by the addition of still further rotary devices, he may operate a pump. That does not, however, enter into the true comparison of the mechanical groups employed.

The result is that I am forced to find that the Martin group and the Perkins group are broadly unlike, one belonging to one category, namely reciprocating apparatus, and the other to another category, namely, rotary apparatus.

These two subdivisions in the science of mechanics are so widely separated that the whole factories and large investments may be and are engaged in the production of machines in one of these categories, and other large factories may be and are engaged in the production of machines in the other of these categories. This disposes of the second factor in this inquiry.

I am, therefore, upon this analysis, and comparison, brought to the true and safe conclusion, to which such analysis and comparison always lead, namely, that the Martin and the Perkins machines are mechanically unlike in principle, mode of operation and results, and are under distinct mechanical laws, assignable to different fields

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or categories in the science of mechanics to which science I have devoted all of my manhood.

I make this statement before and to this honorable court, I wish to say, without any interest, directly or indirectly, in this controversy, and without compensation or reward of any kind, but for the sole and simple purpose of stating conclusions to which I have arrived by the method of comparison above stated, and further I saith not.

(Signed) CHAS. A. BAUER.

Subscribed and sworn to before me this 31st day of December, 1897.

(Signed) J. F. McGIEUR,
[SEAL.] *Notary Public, Clark County, Ohio.*

(Endorsed:) Filed Jan'y 3d, 1898. S. W. Burnham, clerk.

97 On the same day, to wit, the third day of January, 1898, there was filed in the clerk's office of said court the affidavit of Samuel W. Martin, which said affidavit is in words and figures following, to wit:

Affidavit of S. A. Martin. Filed Jan. 3, 1898.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
v.
STOVER MANUFACTURING CO. } In Equity No. —.

STATE OF OHIO,
County of Clark, } *ss:*

I, Samuel W. Martin, being duly sworn, depose and say, that I am the patentee named in the letters patent of the United States No. 433,531, dated August 5th, 1890, for windmills and am the inventor of improvements covered by that patent. For about twenty years, ending in January, 1897, when I resigned, I was superintendent of Mast, Foos & Company's manufacturing establishment, and also a stockholder of the company, and during that time invented many improvements in windmills, pumps, lawn-mowers, and other machinery which that company has successfully manufactured and sold.

I have read the affidavit of Manuel M. Fisher, entitled in this case, and dated December 27th, 1897. In said affidavit on page 3, Mr. Fisher makes this statement:

"It is perfectly evident upon a close study of this Martin patent, that I have now given, that Martin contemplated his windmill mechanism to be used in what is technically known as a power mill, as well as a water-pumping windmill."

This statement is an absolute error. I never contemplated using this patented internal-gear combination in a power mill, or for producing rotary motion. I could not so contemplate it because it is

not applicable to any such use; it is a wholly different organization and produces another kind of motion from the organization and motion in power mills. Indeed, so far from any such contemplation as Mr. Fisher states, the complainant in this case, shortly after I made this pumping-mill combination, made a license contract with an inventor in another State, who had gotten up a power mill in which external gears only and a rotary vertical shaft are used, and such company still continues to make and sell this power mill.

98 Mr. Fisher further states in his affidavit, near the bottom of page 3:

"In my affidavit given to Mr. Toulmin, — which I stated I know of no other internal gear and pitman arrangement like that referred to in this Martin, I never saw a device incorporated in a windmill like the device of this Martin patent, and I do not believe that such a device would be commercially and practically acceptable to the trade. The triangular pitman D exhibited in this Martin patent is an exceedingly awkward and unnatural mechanical attempt to utilize mechanical forces and obtain desired results, and for this reason, if for no other, as referred to in a former part of this affidavit, neither Mr. Perkins nor his company would have ever adopted or followed this Martin patent in windmill construction."

That Mr. Fisher is mistaken in that statement, is manifest by the fact that Mast, Foos & Company have manufactured and sold windmills, not only with a direct connection between the pitman and the actuating rod, but also windmills including the triangular arrangement as shown in my said patent. I attach hereto a cut of such other type of windmill, and mark this cut with my name. I also present a specimen of such windmill and mark the same, "Mast, Foos & Company's triangular pitman windmill." Of the many thousands of windmills made and sold by Mast, Foos & Company in accordance with my said patent, the number of such mills with the pitman connected directly to the actuating rod, and the number of such mills which included this triangular piece, is about equally divided, and both of these forms are covered by my said patent, the first claim being depended upon to cover both forms, and the second and third claims being depended upon to cover this one form in which the triangular piece is used. The same view was taken by the circuit court of appeals, for the eighth circuit, in the decision lately rendered sustaining this first claim in the suit of Mast, Foos & Company against the Dempster Mill Manufacturing Company.

And further deponent saith not.

(Signed) SAMUEL W. MARTIN.

Subscribed and sworn to before me this 31st day of December, 1897.

(Signed) FRED. S. WALLACE,
[SEAL.] *Notary Public, Clark County.*

(Endorsed:) Filed Jan'y 3, 1898. S. W. Burnham, clerk.

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99 On the same day, to wit, the third day of January, 1898, there was filed in the clerk's office of said court the affidavit of W. H. McNair, which said affidavit is in words and figures following, to wit:

Affidavit of W. M. McNair. Filed Jan. 3, 1898.

United States Circuit Court, Northern District of Illinois.

MAST, FOOS & COMPANY
v.
STOVER MANUFACTURING COMPANY. } In Equity. No. —.

STATE OF OHIO,
County of Clark, } *ss:*

I, W. M. McNair, being duly sworn, depose and say that I reside in Springfield, Clark county, Ohio; that from 1887 until the spring of 1890, I resided on a farm, in which I have an interest, in the western part of the State of New York.

After a careful examination of a large number of windmill manufacturers' catalogues, and also after personally inspecting windmills of different makes, we failed to find any power mills of the kind we desired, and we finally purchased one of the Martin internal-gear windmills embodying the Martin patent No. 533,590, from Mast, Foos & Co., some time during the fall of 1889.

During the following winter of 1889–'90, I had occasion to try numerous experiments with this Martin mill to endeavor to obtain a rotary motion for driving a power corn-sheller.

In my experimenting I tried connecting the reciprocating pumping shaft of the windmill direct to a crank attached to a wheel mounted on the end of a horizontal shaft, but found such an arrangement to be impracticable. I then used what is termed a "jack" in the experiment, namely, a short horizontal shaft mounted on a suitable frame with a crank wheel on one end of said shaft, and an external-gear wheel at its other end, and meshing with an external driven gear which was mounted on the end of a short shaft; also carried by the same frame, and on the other end of which was mounted a fly or balance wheel. To the crank wheel of this jack I attached one end of a connecting rod, which, at its other end,

100 was attached to one end of a walking beam. To the other end of this walking beam, I attached the reciprocating pump rod, but this too, I found to be inoperative. At first the problem of producing the required rotary motion seemed perfectly simple, but the more I examined into the matter, the more I became convinced that the problem was one of difficult solution, as I found that in each up-and-down movement of the windmill actuating rod, there were periods of accelerated speed which gradually became less and less until the end of the stroke, and then on the return stroke, of the said actuating rod there would be a gradually accelerated speed for a portion of its movement when it would again gradually diminish in speed. This peculiar motion I found existed

regardless of the velocity of the wind, and was due to said shaft being attached to the crank pin on the internal gear, whereby a less reciprocating motion was produced in the upper and lower quarters of the revolution of this internal gear than occurred in the other two quarters. It therefore would be impossible for a horizontal shaft to be rotated by connecting with a reciprocating windmill rod.

(Signed) W. M. McNAIR.

Sworn to and subscribed before me, a notary public, at Springfield, Ohio, this 1st day of January, 1898.

(Signed) WILLIAM F. BEVITT,
[SEAL.] *Notary Public, Clark County, Ohio.*

(Endorsed:) Filed Jan'y 3, 1898. S. W. Burnham, clerk.

Afterwards, to wit, on the fourth day of January, 1898, in the December term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Entry, Jan. 4, 1898.

MAST, FOOS AND COMPANY
vs.
STOVER MANUFACTURING COMPANY. } 24697.

Now, again come the parties by their solicitors. This cause comes on for further hearing on the motion for preliminary injunction. The court, after hearing the arguments of counsel, postpones the further hearing of this matter indefinitely.

101 Afterwards, to wit, on the fifth day of January, 1898, in the December term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Entry, Jan. 5, 1898.

MAST, FOOS AND COMPANY
vs.
STOVER MANUFACTURING COMPANY. } 24697.

Now again come the parties by their solicitors. This cause comes on for further arguments on the motion for preliminary injunction. The court, after hearing the arguments of counsel in full, takes this matter under advisement.

Afterwards, to wit, on the thirty-first day of January, 1898, there was filed in the clerk's office of said court in said entitled cause an opinion by Judge Grosscup; which said opinion is in the words and figures following, to wit:

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Opinion.

Opinion. Filed — 31, 1898.

In the United States Circuit Court, Northern District of Illinois, Northern Division.

THE MAST, FOOS & COMPANY
vs.
THE STOVER MANUFACTURING CO.

GROSSCUP, *J.:*

Motion for injunction to restrain letters patent, number 350,281, relating to a new and useful improvement in windmills.

The patent was before the United States circuit court of appeals for the eighth circuit, where its validity was affirmed, and a device almost precisely like that of the defendant in this case, was held to be an infringement.

The majority of the court held that the invention consists in the combination of an internal-toothed spur gear with any suitable pinion, wind shaft, wrist pin, pitman and pump rod of a windmill.

Opinion. Filed Jan. 3, 1898. 102

Within the ruling in that case, relating to the scope of the patent, the device of the defendant in the case under consideration, is clearly an infringement.

The only question left is whether this court shall follow the judgment of the circuit court of appeals, both with respect to the validity of the patent and its scope.

The rule laid down by the circuit court of appeals for the seventh circuit (Electric Manufacturing Co. *v.* Edison Electric Co., 18 United States Appeals, 641), is as follows: "That, where the validity of a patent has been sustained by prior adjudication upon final hearing, and after *bona fide* and strenuous contest, the matter of its validity upon a motion for a preliminary injunction is no longer at large, all defenses, except that of infringement, being reserved to the final hearing, subject, however, to the single exception that where a new defense is interposed, the evidence to support it must be so cogent and persuasive as to impress the court with the conviction that if it had been presented, and considered in the former case, it would probably have availed to a contrary conclusion."

Under this rule, the preliminary injunction should unquestionably go, unless the new evidence is so cogent and persuasive, as to impress the court with the conviction that, if it had been presented and considered in the former case, the decision thereon would have been other than it was.

In the case before the court of appeals for the eighth circuit it was clearly shown that windmills have the precise combination of the complainant's patent, except that the driving gear was external instead of internal—had been long in prior use. The single advance said to have been made in the art by the Martin patent, was the

substitution of the internal for the external gear. In this lies the gist of his invention, if any invention there be.

It was also shown in that cause that internal-gear wheels had been long previous in use to drive analogous machines, such as machines for mowing—for sawing wood, and for other purposes. But the court held that the adaptation, or transference, from these other uses, evinces sufficient inventiveness to make it patentable.

There was, in that case, an attempt to prove a prior use of the internal gear in windmills, but such fact was not established to the satisfaction of the court. In the case before that court, therefore, Martin was shown to have been the first man to use an internal gear to drive windmills.

Without questioning the soundness of the court's judgment upon the question of whether patentable invention was shown,
103 I can, on this motion, only inquire if, in all probability, that judgment would have been changed, had credible new evidence such as is before me—been before the court of appeals.

That evidence goes to two points: 1st, that the internal-gear feature of the Martin patent was anticipated in previous patents. 2ndly, that it was anticipated by prior use.

I have looked carefully through all previous patents, brought specifically to my attention as not having been in the case in the eighth circuit, and am convinced that the internal gear, shown in each of them, had no function relating to the driving of the shaft, or the creation of reciprocal action. The function of the internal-gear appliance, in nearly all these cases, was merely to keep the wheel in the wind. I do not feel that the presence of this information, in the mind of the court of appeals, would have changed its judgment, respecting the validity of the patent.

The device principally relied upon to show prior use is that of the Perkins mill, manufactured at Mishawaka, Indiana. It is not disputed that this mill, in fact, antedates the Martin device; the inquiry simply is whether it, in the sense of the patent law, anticipates the Martin device.

The Martin device is described by the inventor as follows:

"The invention consists, essentially, of an improved back-gear organization involving an external-toothed pinion and an internal-toothed spur gear, the pinion being mounted on the wheel shaft, and the gear having formed on or connected with it the wrist pin to which the operating pitman is attached, whereby the speed of the main shaft as applied to the wrist pin and pitman is reduced, and whereby, also, all the pounding and lost motion is prevented as the pitman connection passes over the center and changes from a pushing to a pulling action. This object is accomplished by the fact that a plurality of the pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear."

"In the accompanying drawing, forming a part of this specification and on which like reference letters indicate corresponding

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parts, the figure represents a side elevation of my improved organization, with some of the parts in section, showing the same applied to any approved type of windmill structure."

"The letter A designates a cast frame or structure carried by the upper part of the turn-table of the windmill, of which B
104–106 refers to one of the bearing blocks, and C to an arm to which is pivoted the pitman D. This pitman is triangular and of the type on the market in windmills manufactured by my assignees of this invention. To one extremity of this pitman is attached a pitman bar E, the other end of which bar is fitted upon a wrist pin F carried by the internal gear G. This gear may be of any approved type, so long as it is provided with internal teeth. In the present case, it is constructed with a disk H, having a hub I, and a rim J. It is mounted upon a stud or shaft K, carried by the bearing block B."

"On the main shaft L is placed an external-toothed pinion M. It will be observed from the drawing that the pinion is within the circumference J, and is intermeshed with the teeth of said rim. It will also be noticed that a plurality—three in the present instance—of the teeth of the pinion are engaged with the teeth of the gear rim. This is due to fact that the rim encircles the pinion. Thus it will be seen that when the main shaft is rotated with its pinion the interval-gear wheel G will also be rotated, though at a reduced speed, and as several of the teeth of the pinion are always engaged with the teeth of the rim, no lost motion will occur as the wrist passes the center and the strains are engaged from a pull to a push upon the pitman bar E. The actuating rod O connects with the pitman D, in any approved manner at P, and extends down from the tower to any appliances to be operated—say a pump. The freedom of the organization from lost motion and sudden jerks as the wrist pin passes over the center, renders the operations of the pump smooth and regular. This increases the effectiveness of the pump, and prevents undue wear and tear."

107 The claims are as follows:

(1.) "The combination with a windmill driving shaft and a pinion thereon, of an internal-toothed spur wheel mounted adjacent to the said shaft and meshing with said pinion, a pitman connected with the spur wheel, and an actuating rod connected with the pitman."

(2.) "The combination with a wind-driving shaft and a pinion mounted thereon, of an internal-toothed spur wheel mounted adjacent to said shaft and meshing with said pinion, a pitman bar connected to the spur wheel, a pivoted pitman connected to the said bar, and an actuating rod connected to said pitman."

(3.) "The combination with the upper part of a windmill turn-table the main shaft mounted thereon, and a pitman pivoted thereto, an actuating rod carried by the pitman, and a pinion mounted on said shaft, or stud adjacent to the main shaft an internal-spur gear mounted on said shaft or stud, and having a wrist pin, and a pitman bar connected to the wrist pin, and to said pitman."

The large toothed wheel to which motion is imparted by the

small wheel connecting with the fan carries with it the pitman bar E, thus by the backward and forward motion imparted, communicating action to the pump. It is apparent that, at the moments when the wrist pin F passes directly over and under the axis K, the pitman action changes from a pushing to a pulling, or from a pulling to a pushing action, thereby immediately changing the direction of the strain upon the axis of the wheel. Were the wheel an external gear, intermeshing with the pinion M, this change of strain would have alternately the tendencies to tighten and then widen the interlacing of the cogs. This, I infer, is what the court of appeals referred to in the following sentence, respecting the external-wheel windmill: "As the cogs on the spur wheel and pinion and the other parts of the machinery wore away, the spur wheel and the pinion draw apart and as the pitman connection passed over the center, and the motion changed from a pulling to a pushing one, or *vice versa*, a pounding and racking of the machinery arose, which shortened its life and sometimes stripped the cogs from the pinion." Martin's internal cog wheel obviated this trouble, inseparable to a combination of wheel and pitman, by the fact as stated in his patent. "A plurality of pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod."

Whether the mechanical results pointed out in the patent
108 and approved by the opinion of the court of appeals are, in fact, justified is no part of my inquiry. I must accept the judgment of that court as to that fact.

In the Perkins mill the fan is attached to and turns the large wheel, into the internal cogs of which mesh the cogs of the small wheel attached to the end of a wrist shaft, on the other end of which is a larger cog wheel, which, by external gear, meshes with a small wheel on the top end of a vertical shaft. It will be observed that the motion imparted is necessarily constant, and that the strain on the axis of the several wheels is, at all times, uniform. There is no period in the revolution of the wheel when the strain on the axis of either wheel changes directions; and no moment of lost motion. The absence of the pitman bar attached toward the outer rim of the wheel, as in the Martin device, eliminates and changes a rising from a pushing to pulling action, and *vice versa*. There is, in the Perkins device, therefore, whether it is run by external or internal gear, no danger of pounding or lost motion. In the case of either gear the motion would be constant, smooth and noiseless.

The Perkins device is, in this respect, similar to the internal gears used in mowing and harvesting machines, spoken of by the court of appeals; it is in no sense, either technically or substantially, a combination of internal-toothed wheels with the pinion, pitman, or pump of a windmill, and therefore, could, no more than the internal gear, used in the mowing and harvesting machines, have suggested either the purpose or the result of the Martin device.

I am not convinced that the presence of the Perkins device in the case before the circuit court of appeals would have changed its

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judgment. On the contrary, I feel sure that that court, holding to its other postulates, would have classed the Perkins device with the others referred to, as being no such sufficient anticipation of the thought embodied in the Martin invention as to invalidate its patentability.

The motion for an injunction must, therefore, be sustained.

P. S. GROSSCUP.

(Endorsed:) Filed Jan. 31, 1898. S. W. Burnham, clerk.

109 Afterwards, to wit, on the second day of February, 1898, in the December term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Order of February 2, 1898.

Order. Entered Feb. 2, 1898.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } 24697.

This cause coming on to be heard upon the complainant's motion for a preliminary injunction to restrain the defendant from infringing the letters patent No. 433,531, issued to the complainant, August 5, 1890, for windmill, and was argued by counsel and the court being fully advised in the premises, it is ordered that a preliminary injunction be issued in accordance with the prayer of the bill; and the said defendant, by its solicitors, having filed its petition for an appeal to the United States circuit court of appeals for the seventh circuit, from the order for preliminary injunction hereby granted, said appeal is hereby allowed upon the filing of an appeal bond herein in the penal sum of seven thousand, five hundred dollars, with surety to be approved by the court, said appeal bond to act and stand as a supersedeas of said preliminary injunction.

110 On the same day, to wit, the second day of February, 1898, came the Stover Manufacturing Company, by its solicitors, and filed in the clerk's office of said court its prayer for appeal, which said prayer for appeal is in the words and figures following, to wit:

Prayer for Appeal.

Prayer of appeal. Filed Feb. 2, 1898.

In the Circuit Court of the United States for the Northern District of Illinois.

MAST, FOOS & COMPANY, Complainant,
vs.
STOVER MANUFACTURING COMPANY, Defendant. } In Equity.

Now comes the above-named defendant, Stover Manufacturing Company, by its solicitors, and prays an appeal to the United States circuit court of appeals, for the seventh circuit, from the order entered herein awarding and granting a preliminary injunction against this defendant.

Dated Chicago, February 1, 1898.

OFFIELD, TOWLE & LINTHICUM,
Solicitors for Defendant.

(Endorsed:) Filed Feb. 2, 1898. S. W. Burnham, clerk.

111 On the same day, to wit, the second day of February, 1898, came the Stover Manufacturing Company, by its solicitors, and filed in the clerk's office of said court its assignments of error, which said assignments of error is in words and figures following, to wit:

Assignments of Error.

Assignment of error. Filed Feb. 2, 1899.

In the Circuit Court of the United States for the Northern District of Illinois.

MAST, FOOS & COMPANY, Complainant,
vs.
STOVER MANUFACTURING COMPANY, Defendant. } In Equity.

The above-named defendant, Stover Manufacturing Company, believing itself to be aggrieved by the interlocutory order granting a preliminary injunction as prayed in the bill, prays an appeal from said order to the United States circuit court of appeals, for the seventh circuit, and assigns error as follows:

First. That the court erred as to all findings appearing in said interlocutory order or decree and the awarding or granting of an injunction thereby.

Second. That the court erred in granting the injunction identified by said order or decree.

Third. That the court erred in finding the letters patent granted to Samuel W. Martin, dated August 5, 1890, to be valid and in restraining the defendant, your petitioner, from making, using or

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selling the alleged improvement in back gearing set forth in said letters patent pending the final hearing of this suit.

Fourth. The court erred in finding that the defendant had infringed upon said letters patent or any of the claims thereof and in granting and ordering an injunction against such infringement, and the defendant prays that this appeal may be allowed and the transcript of the record and proceedings and papers upon which said decree was entered and such injunction granted, duly authenticated, may be sent to the United States circuit court of ap-
112 peals for the seventh circuit, and defendant prays for a supersedeas of the injunction granted by the order herein appealed from pending said appeal.

OFFIELD, TOWLE & LINTHICUM,
Solicitors and of Counsel for Defendant.

(Endorsed:) Filed Feb. 2, 1898. S. W. Burnham, clerk.

On the same day, to wit, the second day of February, 1898, came Stover Manufacturing Company, as principal and Daniel C. Stover and Willis A. Merrifield, as sureties, and filed in the clerk's office of said court in said entitled cause a certain appeal bond, which said appeal bond is in the words and figures following, to wit:

Appeal Bond.

Appeal bond. Filed Feb. 2, 1898.

Know all men by these presents, that we, The Stover Manufacturing Company, as principal, and Daniel C. Stover, and Willis A. Merrifield, of Freeport, Stephenson county, Illinois, as sureties, are held and firmly bound unto Mast, Foos and Company, of Springfield, Ohio, in the full and just sum of seven thousand five hundred dollars to be paid to the said Mast, Foos and Company, its certain attorney, executors, administrators or assigns, to which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, by these presents.

Sealed with our seals and dated this second day of February, in the year of our Lord, one thousand eight hundred and ninety-eight.

Whereas, lately at a term of the circuit court of the United States for the northern district of Illinois, in a suit depending in said court, between Mast, Foos and Company, an Ohio corporation, complainant, and Stover Manufacturing Company, an Illinois corporation, defendant, in equity an interlocutory order or decree was entered therein awarding a preliminary injunction against said Stover Manufacturing Company, defendant, and the said Stover Manufacturing Company, having obtained an appeal and filed a copy thereof in the clerk's office of the said court to reverse the said order or decree in the aforesaid suit, and a citation directed to the said Mast, Foos and Company citing and admonishing it to be and appear at a United States circuit court of appeals for the seventh

circuit, to be holden at Chicago within 20 days from the date hereof.

113 Now, the condition of the above obligation is such, that if the said Stover Manufacturing Company shall prosecute its appeal to effect, and answer all damages and costs if it fail to make *it* its plea good, then the above obligation to be void; else to remain in full force and virtue.

STOVER MFG. CO., [SEAL.]
By D. C. STOVER, *Pres't.* [SEAL.]
DANIEL C. STOVER. [SEAL.]
WILLIS A. MERRIFIELD. [SEAL.]

Sealed and delivered in presence of—

C. J. LINTHICUM.
L. L. MORRISON.

Approved by—

P. S. GROSSCUP, *Judge.*

(Endorsed:) Filed Feb. 2, 1898. S W. Burnham, clerk.

On the same day, to wit, the second day of February, 1898, in the December term of said court, 1897, in the record of proceedings thereof in said entitled cause before the Hon. Peter S. Grosscup, district judge, appears the following entry, to wit:

Order. Entered Feb. 2, 1899.

MAST, FOOS & COMPANY
vs. } 24697.
STOVER MANUFACTURING COMPANY.

A preliminary injunction having been granted herein and an appeal prayed and allowed thereon to the United States circuit court of appeals for the seventh circuit, it is ordered that the special deposit of two thousand dollars made by the defendant pending hearing of the motion for injunction be released and repaid to the defendant or its solicitor, a sufficient bond on appeal having been approved and filed.

114 Afterwards, to wit, on the seventeenth day of February, 1898, there was filed in the clerk's office of said court in said entitled cause a certain stipulation, which said stipulation is in words and figures following, to wit:

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Stipulation.

Stipulation. Filed Feb. 17, 1898.

Circuit Court of the United States, Northern District of Illinois.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } No. 24697. In Equity.

It is stipulated and agreed by and between counsel for the parties to the above entitled suit that in making up the record for the United States circuit court of appeals for the seventh circuit in the above case, the defendant's answer which was filed herein after the submission of the motion for injunction to the court, and the affidavit of Edward Christman, which related to a defense not presented to, nor considered by, the court, shall be omitted.

Second. That the following documentary exhibits shall also be omitted from the transcript and from the printed record, but shall be sent up therewith and considered in the court of appeals as original exhibits, to wit:

Fisher 1889 catalogue.
Fisher 1890 catalogue.
Fisher 1891 catalogue.
Complainant's Exhibit Record in Dempster Case.
Defendant's Exhibits Sketches Nos. 1 to 16 referred to in affidavit of Irvine Miller.

Third. That in printing the record herein there shall be bound with five copies thereof defendant's patent exhibits offered and identified in affidavit of Irvine Miller, and that said patent exhibits shall be omitted from the remaining printed copies of the record.

LYSANDER HILL,
Solicitor for Complainant.
OFFIELD, TOWLE & LINTHICUM,
Solicitors for Defendant.

(Endorsed:) Filed Feb'y 17, 1898. S. W. Burnham, clerk.

115–580 *Clerk's Certificate.*

NORTHERN DISTRICT OF ILLINOIS, } ss:
Northern Division, }

I, S. W. Burnham, clerk of the circuit court of the United States for said northern district of Illinois, do hereby certify the above and foregoing to be a true and complete transcript of the record of all the proceedings had in said court, except the parts omitted per stipulation, in the cause wherein Mast, Foos & Company is the complainant and Stover Manufacturing Company is the defendant, as the same appear from the original records and files of said court now remaining in my custody and control.

In testimony whereof I have hereunto set my hand and affixed the seal of said court at my office in Chicago, in said district, this 18 day of February, 1898.

S. W. BURNHAM, *Clerk.*

Citation.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to Mast, Foos and Company, a corporation, &c.:

You are hereby cited and admonished to be and appear at a United States circuit court of appeals for the seventh circuit, to be holden at Chicago within thirty days from the date hereof, pursuant to an appeal filed in the clerk's office of the circuit court of the United States for the northern district of Illinois, northern division, wherein The Stover Manufacturing Company is the appellant and you are appellee, to show cause, if any there be, why the judgment rendered against the said appellant, as in the said appeal mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable Peter S. Grosscup, judge of the district court of the United States, this second day of February, in the year of our Lord one thousand eight hundred and ninety-eight.

P. S. GROSSCUP, *Judge.*

Due service of the above accepted this 28th day of February, 1898.

L. HILL,
Of Counsel for Compl't.

581 At a regular term of the United States circuit court of appeals for the seventh circuit, begun and held at the United States court-room, in the city of Chicago, on Monday, the fourth day of October, 1897, of the October term in the year of our Lord one thousand eight hundred and ninety-seven and of our Independence the one hundred and twenty-second.

And afterwards, to wit: on the third day of March, 1898, in the October term aforesaid, came the appellee by its counsel, Mr. Lysander Hill, and filed his appearance in the office of the clerk of said court, said appearance being in the words and figures following, to wit:

United States Circuit Court of Appeals for the Seventh Circuit, October Term, 1897.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } No. 486.

The clerk will enter my appearance as counsel for the appellee

LYSANDER HILL.

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NOTE.—Must be signed by a member of the bar of the United States circuit court of appeals for the seventh circuit. Individual and not firm names must be signed.

Endorsed: Filed Mar. 3, 1898. Oliver T. Morton, clerk.

And afterwards, to wit: on the seventh day of March, 1898, in the October term aforesaid, came the appellee, by its counsel, Mr. H. A. Toulmin, and filed in the office of the clerk of said court his appearance, said appearance being in the words and figures following, to wit:

582 United States Circuit Court of Appeals for the Seventh Circuit, October Term, 1897.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } No. 486.

The clerk will enter my appearance as counsel for the appellee.

H. A. TOULMIN,
Springfield, Ohio.

NOTE.—Must be signed by a member of the bar of the United States circuit court of appeals, for the seventh circuit. Individual and not firm names must be signed.

Endorsed: Filed Mar. 7, 1898. Oliver T. Morton, clerk.

And afterwards, to wit: on the eighth day of March, 1898, came the appellant, by its counsel, Mr. Charles K. Offield, Mr. Henry S. Towle and Mr. Charles C. Linthicum, and filed their appearances in the office of the clerk of said court, said appearances being in the words and figures following, to wit:

United States Circuit Court of Appeals for the Seventh Circuit, October Term, 1897.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } No. 486.

The clerk will enter my appearance for The Stover Manufacturing Co. (appellant).

CHARLES K. OFFIELD.
HENRY S. TOWLE.
CHARLES C. LINTHICUM.

NOTE.—Must be signed by a member of the bar of the
583 United States circuit court of appeals, for the seventh circuit. Individual and not firm names must be signed.

Endorsed: Filed Mar. 8, 1898. Oliver T. Morton, clerk.

And afterwards, to wit: on the fifth day of April, 1898, in the October term aforesaid, there was filed in the office of the clerk of said court a stipulation, the said stipulation being in the words and figures following, to wit:

United States Circuit Court of Appeals for the Seventh Circuit.

STOVER MANUFACTURING COMPANY, Appellant,
vs.
MAST, FOOS & COMPANY, Appellee. } No. 486.

It is hereby stipulated and agreed by and between the parties to the above-entitled cause, that an order may be entered herein, granting leave to withdraw volume 2 of the transcript of the record from the United States circuit court of appeals, filed herein on March 2, 1898, and that the clerk of said United States circuit court may affix to his certificate thereto his signature and the seal of the court, inadvertently omitted by him in transmitting the record to this court. That said record, so amended, may be refiled *nunc pro tunc* as of March 2, 1898, and that the case in this court may be heard upon said record as so amended.

April 5, 1898.

CHARLES K. OFFIELD,
HENRY S. TOWLE,
C. C. LINTHICUM,
Counsel for Appellant.
LYSANDER HILL,
Counsel for Appellee.

Endorsed: Filed Apr. 5, 1898. Oliver T. Morton, clerk.

584 And afterwards, on the same day, to wit: on the fifth day of April, 1898, in the October term aforesaid, in the record of proceedings in said entitled cause appears the following entry, to wit:

TUESDAY, *April* 5, 1898.

Before Hon. William A. Woods, circuit judge; Hon. John W. Showalter, circuit judge.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } 486.

Appeal from the circuit court of the United States for the northern district of Illinois, northern division.

Upon application of counsel for appellant and upon filing of stipulation of counsel that an order may be entered in this cause granting leave to withdraw volume 2 of the transcript of the record from the United States circuit court of appeals, filed herein on March 2, 1898, and that the clerk of said United States circuit court may affix to his certificate thereto his signature and the seal of the

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court, inadvertently omitted by him in transmitting the record to this court, it is now here ordered that this motion be granted, and that this record so amended may be refiled *nunc pro tunc* as of March 2, 1898, and that this cause in this court may be heard upon this record as so amended.

And afterwards, to wit: on the sixth day of April, 1898, came the appellant by one of its counsel, Mr. L. L. Morrison, and filed in the office of the clerk of said court his appearance, said appearance being in the words and figures following, to wit:

585 United States Circuit Court of Appeals for the Seventh Circuit, October Term, 1897.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } No. 486.

The clerk will enter my appearance as counsel for the appellant.

L. L. MORRISON,
Rockford, Ill.

NOTE.—Must be signed by a member of the bar of the United States circuit court of appeals for the seventh circuit. Individual and not firm names must be signed.

Endorsed: Filed Apr. 6, 1898. Oliver T. Morton, clerk.

And afterwards, to wit, on the seventh day of April, 1898, in the October term aforesaid, came the appellant, by one of its counsel, Mr. C. C. Linthicum, and filed a motion for award of writ of certiorari, said motion being in the words and figures following, to wit:

UNITED STATES OF AMERICA,
Seventh Judicial Circuit, } *ss:*

In the United States Circuit Court of Appeals for the Seventh Circuit.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } 486.

Now comes said appellant, by Mr. C. C. Linthicum, one of its attorneys, and suggests a diminution of the record in this cause in this court, to wit: That "Exhibit B" attached to and made a part of the affidavit of Robert Doyle, which is of record in the
586 United States circuit court for the northern division of the northern district of Illinois, is omitted from the transcript filed in this cause.

Wherefore, the said appellant moves the court to award a writ of certiorari to be issued and directed to the judges of said court com-

manding them that searching the records and proceedings in said cause, they forthwith certify to this court those parts of the record in said cause so omitted as aforesaid.

C. C. LINTHICUM,
Of Counsel for Appellant.

Endorsed: Filed Apr. 7, 1898. Oliver T. Morton, clerk.

And afterwards, on the same day, to wit, on the seventh day of April, 1898, in the October term aforesaid, came the appellant, by one of its counsel, Mr. C. C. Linthicum, and filed in the office of the clerk of said court the affidavit of Mr. C. C. Linthicum, which said affidavit is in the words and figures following, to wit:

UNITED STATES OF AMERICA, } ss:
Seventh Judicial Circuit, }

In the United States Circuit Court of Appeals for the Seventh Circuit.

STOVER MANUFACTURING COMPANY
vs. } 486.
MAST, FOOS & COMPANY.

C. C. Linthicum, being first duly sworn, says that he is one of the attorneys for the appellant in the above-entitled cause; that he ordered from the office of the clerk of the United States circuit court for the northern district, northern division of Illinois, a transcript of the record in said cause for filing in the above-entitled court, and that after the filing in this court of what this affiant was informed and then believed to be a transcript of the record in said cause, it appeared and was made known to affiant and the fact is that "Exhibit B" attached to and made a part of the affidavit of Robert Doyle, which is of record in said United States circuit court,
587 was omitted from such transcript now on file herein, and affiant believes such exhibit to be necessary to the hearing of such cause in this court.

C. C. LINTHICUM.

Subscribed and sworn to before me this seventh day of April, A. D. 1898.

FREDERICK C. GOODWIN,
Notary Public.

Endorsed: Filed Apr. 7, 1898. Oliver T. Morton, clerk.

And afterwards, on the same day, to wit: on the seventh day of April, 1898, in the October term aforesaid, the following further proceedings were had in said entitled cause and entered of record, to wit:

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THURSDAY, *April* 7, 1898.

Before Hon. William A. Woods, circuit judge; Hon. James G. Jenkins, circuit judge; Hon. John W. Showalter, circuit judge.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS & COMPANY. } 486.

Appeal from the circuit court of the United States for the northern district of Illinois, northern division.

Upon application of Mr. C. C. Linthicum, counsel for appellant, to award a writ of certiorari, in this cause, to be directed to the judges of the circuit court of the United States for the northern district of Illinois, and upon filing of motion and affidavit in support thereof, it is ordered that this writ issue.

And afterwards, on the same day, to wit: on the seventh day of April, 1898, there was issued out of and under the seal of said court, a writ of certiorari in said cause directed to the judges of the United States circuit court for the northern district of Illinois, said writ of certiorari being in the words and figures following, to wit:

588 THE UNITED STATES OF AMERICA, *ss*:

[SEAL.] The President of the United States to the judges of the circuit court of the United States for the northern district of Illinois, northern division, Greeting:

Whereas in a certain suit in said United States circuit court for the northern district of Illinois, northern division, between Mast, Foos and Company, complainant, and Stover Manufacturing Company, defendant, which suit was removed to the United States circuit court of appeals for the seventh circuit, by virtue of an appeal agreeably to the act of Congress in such case made and provided, a diminution of the record and proceedings of said cause has been suggested, to wit:

That "Exhibit B" attached to and made a part of the affidavit of Robert Doyle, which is of record in the said United States circuit court for the northern district of Illinois, northern division, is omitted from the transcript.

You therefore are hereby commanded that, searching the record and proceedings in said cause, you certify what omission to the extent above enumerated, you shall find, to the said United States circuit court of appeals for the seventh circuit, so that you have the same, together with this writ, before the said United States circuit court of appeals for the seventh circuit forthwith.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, this 7th day of April, A. D. 1898.

OLIVER T. MORTON,
Clerk United States Circuit Court of Appeals for the Seventh Circuit.

And afterwards, on the same day, to wit: on the seventh day of April, 1898, in the October term aforesaid, there was filed in the office of the clerk of said court the return to the writ of certiorari, which said return was in the words and figures following, to wit:

(Here follows cut marked p. 588*a*.)

589 *Clerk's Certificate.*

UNITED STATES OF AMERICA,
Northern District of Illinois, Northern Division.

NORTHERN DISTRICT OF ILLINOIS, *ss*:

I, Sherburn W. Burnham, clerk of the United States circuit court for the northern district of Illinois, do hereby certify to the honorable judges of the United States circuit court of appeals for the seventh circuit, that having examined the record and proceedings in the suit of which mention is within made, to wit: the case of Mast, Foos & Co., complainant, against The Stover Manufacturing Company, defendant, lately pending in the said circuit court, a certain exhibit marked "B" attached to the affidavit of Robert Doyle, a true copy of which affidavit as fully and entirely as the original thereof now remains in my custody and of record, I do hereby certify and transmit to the said judges as within I am commanded.

In testimony whereof I have hereunto set my hand and affixed the seal of said court at my office in the city of [SEAL.] Chicago, in said district, this seventh day of April, 1898, and of our Independence the one hundred and twenty-second year.

S. W. BURNHAM, *Clerk*.

Endorsed: Filed Apr. 7, 1898. Oliver T. Morton, clerk.

And afterwards, to wit: on the ninth day of April, 1898, in the October term aforesaid, came the appellant by its counsel, Messrs. Offield, Towle & Linthicum, and filed in the office of the clerk of said court a notice, said notice being in the words and figures following, to wit:

590 United States Circuit Court of Appeals for the Seventh Circuit.

STOVER MANUFACTURING COMPANY, Appellant,
vs.
MAST, FOOS & COMPANY, Appellee. } In Equity.

To Lysander Hill and H. A. Toulmin, solicitors and of counsel for appellee.

GENTLEMEN: Please take notice that at 2 o'clock this afternoon before their honors Judges Woods and Showalter, the present attending judges in the U. S. circuit court of appeals for the seventh

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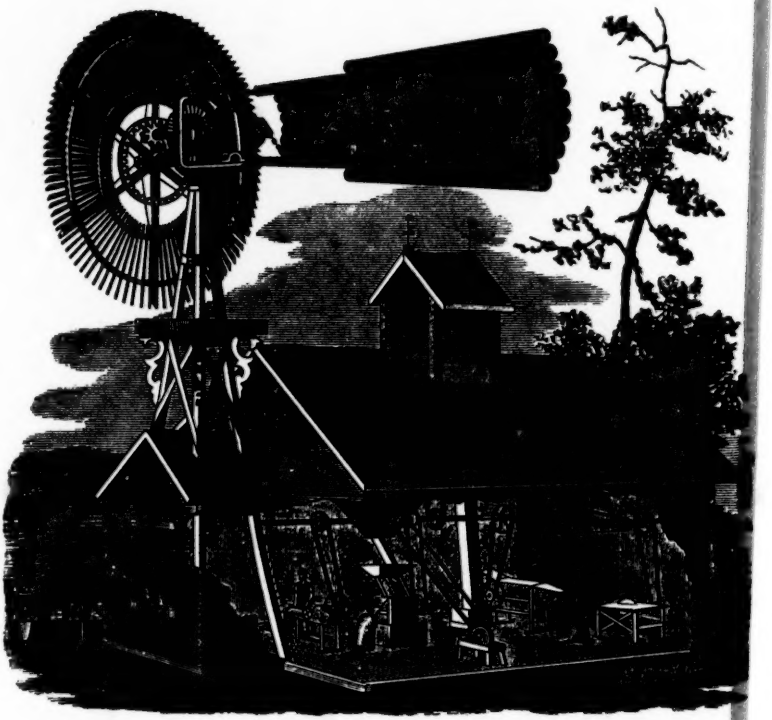
No. 149
Mash, Power Co.
v.
Stover Mfg Co
} p. 588

"EXHIBIT B."

PERKINS WINDMILL COMPANY, MISHAWAKA, IND.



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circuit, sitting in Chicago, we shall move this court that the above-entitled cause be set peremptorily and positively for hearing upon the opening of the next session of the court of appeals at Chicago, upon the 2nd day of May, 1898, at 2 o'clock p. m. of that date, and shall urge as a reason for such motion, the acts of the complainant herein of harassment, annoyance and abuse in using the Federal courts of this country by needless and unwarranted suits and proceedings against the defendants herein, or its agents or customers.

OFFIELD, TOWLE & LINTHICUM,
Solicitors and of Counsel for Appellant.

Chicago, Apr. 9, 1898.

Receipt of copy acknowledged this 9th day of April, 1898.

——— ———,
Sol'rs and of Counsel for Appellee.

Endorsed: Filed Apr. 9, 1898. Oliver T. Morton, clerk.

And afterwards, on the same day, to wit: on the ninth day of April, 1898, in the October term aforesaid, came the appellant by its counsel, Messrs. Offield, Towle and Linthicum, and filed in the office of the clerk of said court a motion, said motion being in the words and figures following, to wit:

591 United States Circuit Court of Appeals for the Seventh Circuit.

STOVER MANUFACTURING COMPANY, Appellant,
vs.
MAST, FOOS & COMPANY, Appellee.
} In Equity.

And now comes the said defendant appellant by Offield, Towle & Linthicum, its attorneys, and moves that the above-entitled cause be set for final hearing in this court upon Monday the 2nd day of May, 1898, at 2 o'clock p. m. of that day.

OFFIELD, TOWLE & LINTHICUM.

Endorsed: Filed Apr. 9, 1898. Oliver T. Morton, clerk.

And afterwards, to wit: on the second day of May, 1898, in the October term aforesaid, the following further proceedings were had and entered of record, to wit:

MONDAY, *May* 2, 1898.

Before Hon. William A. Woods, circuit judge; Hon. John W. Showalter, circuit judge.

It is ordered by the court that Romanzo Bunn, judge of the district court of the United States for the western district of Wisconsin, be designated and assigned to sit in this court as a member thereof during the present session. Thereupon said Bunn appeared and took his seat as a member of said court.

And afterwards, on the same day, to wit: on the second day of May, 1898, in the October term aforesaid, the following further proceedings were had and entered of record, to wit:

592 MONDAY, *May* 2, 1898.

Before Hon. William A. Woods, circuit judge; Hon. John W. Showalter, circuit judge; Hon. Romanzo Bunn, district judge.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS & COMPANY. } 486.

Appeal from the circuit court of the United States for the northern district of Illinois, northern division.

It is ordered by the court that this cause be, and the same is hereby set down for hearing on Monday, May 2, 1898.

And afterwards, on the same day, to wit: on the second day of May, 1898, in the October term aforesaid, the following further proceedings were had and entered of record, to wit:

MONDAY, *May* 2, 1898.

Before Hon. William A. Woods, circuit judge; Hon. John W Showalter, circuit judge; Hon. Romanzo Bunn, district judge.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS & COMPANY. } 486.

Appeal from the circuit court of the United States for the northern district of Illinois, northern division.

Now this day come the parties by their counsel and this cause now comes on to be heard on the printed record and briefs of counsel, and the court not now being sufficiently advised takes this matter under consideration.

593 And afterwards, to wit: on the twenty sixth day of July, 1898, in the October term aforesaid, there was filed in the office of the clerk of said court the opinion of the court in the above-entitled cause, said opinion being in the words and figures following, to wit:

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In the United States Circuit Court of Appeals for the Seventh Circuit, May Session, A. D. 1898.

STOVER MANUFACTURING COMPANY vs. MAST, FOOS & COMPANY.	No. 486. Appeal from the Circuit Court of the United States for the Northern District of Illinois, Northern Division.

Before Woods and Showalter, circuit judges, and Bunn, district judge.

This appeal is from an interlocutory order of injunction against infringement of the first claim of letters patent No. 433,531, granted on August 5, 1890, to Samuel W. Martin for improvement in windmills. The claim and a reduced form of the drawing of the patent are as follows:

"The combination with a windmill driving shaft and a pinion thereon, of an internal-toothed spur wheel mounted adjacent to the said shaft and meshing with said pinion, a pitman connected with this spur wheel and an actuating rod connected with the pitman."

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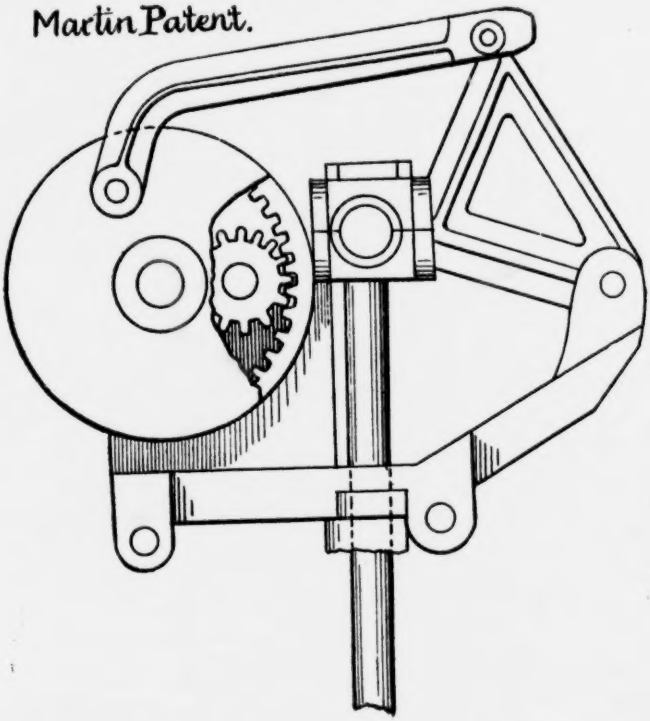
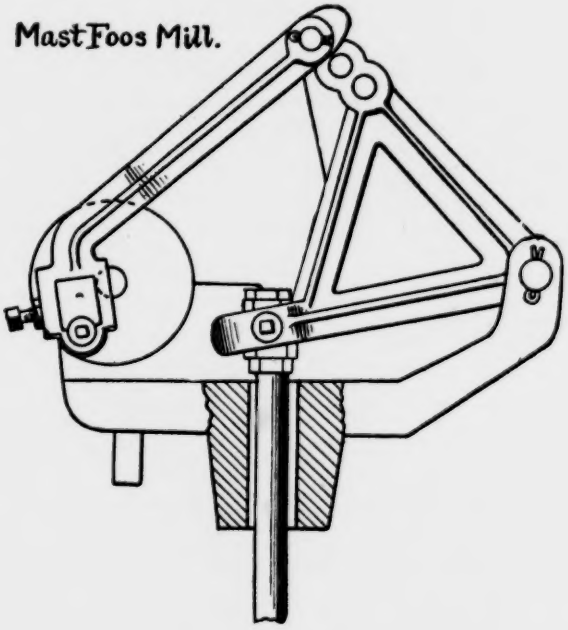
Martin Patent.



As illustrative of the different types of windmills and of the development of the art, the appellant put in evidence the following letters patent issued at various dates prior to and on November 2, 1880: No. 182,389 to E. Williams, No. 189,132 to D. Nysewander, No. 207,189 to Samuel W. Martin; No. 233,134 to G. M. Beard; No. 233,928 to G. C. Harris; and also a sketch here reproduced of a windmill made by Mast, Foos & Co., referred to in the patent in suit.

595



To show the prior use of the internal-gear wheels in windmills the following letters patent were put in evidence, the last bearing date October 29, 1889: No. 2215 to Perry Davis; No. 254,527 to G. H. Andrew; No. 267,440 to M. R. Martin; No. 271,635 to W. H. & C. A. Holcombe; No. 273,226 to P. T. Coffield; No. 283,109 to W. H. & C. A. Holcombe; No. 317,731 to Colman & Turner; No. 320,182 to D. & W. W. Shilling; No. 321,750 to G. H. Pattison; No. 346,674 to H. G. Newell; No. 414,113 to J. T. Hostler; and also a sketch of the Perkins windmill which was in use before the date of Martin's conception, the relevant parts of which are shown in the following drawing:

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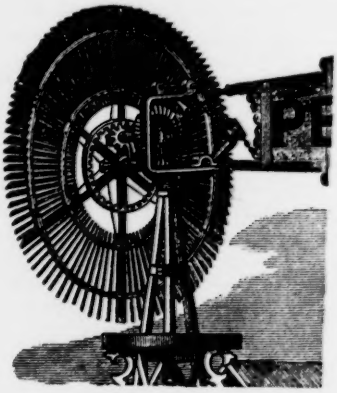
596



Other proof was offered of the use of internal-gear wheels in the mechanic arts generally, including Schenk's patent No. 380,697 for a mechanical movement, the Berrigan patent No. 273,705 for improvement in lawn-mowers, the Hall & Town patent No. 97393, for a sawing machine, the Wilson patent No. 232,384, for a treadmill, and from the book entitled "507 Mechanical Movements," published in 1871, cut 34 and the following description thereof:

"An internally toothed spur gear and pinion. With ordinary gears the direction of rotation is opposite; but with the internally toothed gear the two rotate in the same direction, and with the same strength of tooth the gears are capable of transmitting greater force, because more teeth are engaged."

WOODS, *circuit judge*, after making the foregoing statement, delivered the opinion of the court:

It is objected at the threshold that this court is not at liberty on this appeal to inquire into the validity of the first claim of the Martin patent, because, before the hearing was had in the court below, the validity of that claim had been determined by the United States circuit court of appeals for the eighth circuit in the case, which will here be called the Dempster case, of *Mast, Foos & Co. v. Dempster Mill Mfg. Co.*, 49 U. S. App., 508, 27 C. C. A., 191. The court below, in obedience to the opinion of this court in *Electric Mfg. Co. v. Edison Electric Light Co.*, 18 U. S. App., 641, 10 C. C. A., 106, deemed itself bound to follow the earlier decision, and now it is insisted that this court must affirm the order entered without inquiry into the question of the patentable novelty of the claim or into any question decided by the court in the eighth circuit.

597 The decisions touching the practice on appeals from interlocutory orders under the judiciary act of 1891 have not been in entire harmony, but in the recent case of *Smith v. Vulcan Iron Works*, 165 U. S., 518, where the decisions touching the subject are collected, the Supreme Coure has defined clearly the scope of the

review which the act was intended to authorize. After declaring that the appeal, which by section 7 of the act may be taken from an "interlocutory order or decree granting or continuing such injunction," is an appeal "from the whole of such interlocutory order or decree, and not from that part of it only which grants or continues an injunction," the court proceeds to say that the manifest intention of the provision was "not only to permit the defendant to obtain immediate relief from an injunction, the continuance of which throughout the progress of the cause might seriously affect his interest; but also to save both parties from the expense of further litigation, should the appellate court be of opinion that the plaintiff was not entitled to an injunction because his bill had no equity to support it." The comprehensive terms of this expression forbid the suggestion that it does not apply when the appeal is from an order made upon affidavits, and not from a decree ordering both an injunction and an accounting, entered as a result of a hearing upon full proofs. If there is ground for a distinction in that respect it is in favor of the appeal from a preliminary order made upon *ex parte* and imperfect showings at the commencement of litigation, rather than an appeal from an injunction perpetual in terms granted after a full hearing, which is called interlocutory only because there remains to be taken an accounting, upon which the evidence adduced cannot ordinarily affect the injunction. This being the scope of the appeal, the logical inference would seem to be that every application to a circuit court for an injunction or temporary restraining order should be considered on its merits, and that a ruling or opinion of another court upon any question involved should be given only its just and reasonable weight according to the circumstances. The statute gives the right of appeal, the Supreme Court has determined that the review, so far as may be, shall extend to the merits. and it is not consistent to say that the decision of an inferior court must be pronounced on one basis and reviewed on another.

In respect to the merits: It was stated in the opinion of the court in the Dempster case, and we think correctly, that "the essential element" of the first claim of the patent was "the internal-toothed spur wheel or spur gear meshing with and driving the pinion which actuated the pitman and pump rod;" and at the same
598 time it was conceded to be "true that internal-toothed spur wheels, their effect, and their relative advantages over external-toothed wheels had been familiar to mechanics time out of mind." In view of that concession and of the obvious cogency of the dissenting opinion of Judge Thayer it is to be inferred that the court could not have found in the patent the novelty essential to invention but for the presence of features of evidence not apparent in this record. For instance, in that case only one patent on windmills, No. 182,394 granted on September 19, 1876, to Edward Williams, was offered as anticipating Martin's, and that showed a pitman actuated by two eccentric external-toothed gear wheels. Accordingly the court, after rejecting as unsatisfactory the testimony of the one witness by whom it was attempted to show prior use, dismissed from further consideration the defenses of prior use

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and non-utility, and in considering the question of infringement, declared, upon the proof before it, that prior to Martin's invention, "all windmills had been driven by external-toothed spur wheels," that in the mills so constructed, as the cogs and other parts wore away, a pounding and racking of the machinery was caused "as the pitman connection passed over the center and the motion changed from a pulling to a pushing one, and *vice versa*, shortening the life of the mill and sometimes stripping the cogs from the pitman;" and, after quoting from the specification the statement that "a plurality of the pinion teeth are always engaged with internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear," the court added: "The evidence is undisputed that this invention completely accomplished its purpose." Certainly a remarkable success, as stated, and well worthy of a patent. But the proof in the present record shows no such merit. In that case the record also disclosed and the court laid stress upon the fact that the president of the infringing company, before abandoning the external and adopting the internal gearing, had seen one of the mills made under the Martin patent in operation, and had appropriated that form of construction on the advice of his pattern-maker who had been in the employ of an earlier infringer. "The inevitable conclusion to which these facts lead," the court declared, "could not be escaped by asking that the broad terms of the first claim be confined to the meaning of the restricted terms of the other claims;" and the contention that the substitution of internal for external gearing in a windmill, in view of the common use of both forms of gearing in other machines in familiar use was not invention, the court answered by declaring it
599 passing strange, if naught but the skill of the mechanic was required to make the improvement, "that no mechanic ever made it until after Martin discovered and described it." "Moreover," the court added, "the combination of Martin immediately went into general use. More than three thousand windmills which contain his combination have been manufactured and sold since 1890." That opinion was handed down on August 2, 1897, and the suggestion is obvious that the sale of the number of mills stated in a period of more than seven years was not phenomenally large for a strong and energetic establishment. The proof in this case shows that the prior form of construction was by no means superseded by the new, which, according to the evidence here presented, constitutes not more than fifteen per cent. of the total output on the market. It is evident too that the supposed defects of the external gearing had been exaggerated; that their tendency to friction and to wear and tear, if constructed with adequate strength and properly adjusted, is not essentially different from that of the other form, and if cogs have ever been stripped off it was due to faulty construction or maladjustment. This seems to us to be the reasonable view of that phase of the question; and instead of it being true here, as in the Dempster case, that the alleged infringer appropriated Martin's construc-

tion after seeing it in operation, the testimony of the president of the Stover Company is that the adoption by that company of the internal gear for operating the actuating rod of its windmill was a mere accident or incident of construction in the first instance, without any knowledge of the Martin patent or mechanism, and was accomplished simply by transferring the internal gear from other machines made by the company side by side with its windmills, such as power feed-mills driven by horse-power. No reason is shown to discredit this testimony, and it follows that if Martin made an invention, the appellant is entitled to the credit of making the same discovery. The more reasonable conclusion is, as it seems to us, that neither can be credited with the exercise of more than ordinary mechanical skill. That the internal gearing employed to actuate the pitman of a windmill has some advantages, and therefore may be properly called an improvement over external gearings, there can be no doubt, but in a windmill the advantages are not different in kind from what they are in other machines which have a dead point, the passing of which involves a constant change from pulling to pushing and *vice versa* in the application of the operative force. The advantages are the same "relative advantages" which, it is conceded, had been familiar to mechanics time out of mind. That the improvement was not incorporated in windmills sooner,
600 on the proof here made is not strange. It is shown, and without proof would be inferred, that it is a matter of expense and inconvenience to remodel and recast any part of a machine, though in itself trivial, and upon this ground as well as by reason of that inertia which disposes manufacturers to let well enough alone a manifestly desirable change in the structure of a machine, already in successful use, will go unmade until forced in order to meet the competition of a new or more enterprising rival. The first to make such an improvement is not in fact an inventor, and to infer invention because it had not been produced sooner would be to reach a false conclusion by an argument neither persuasive nor plausible. *See Parlin & Orendorff Co. v. Moline Plow Co. (this court, this session).*

Other considerations aside, the proof of the prior art in this record is different from and far more extensive than it was in the Dempster case. Besides the Williams patent a number of patents are in evidence showing windmills with both external and internal gearings. The fact was pointed out and deemed material by the court below that the internal gear shown in each of the patents in evidence "had no function relating to the driving of the shaft, or the creation of reciprocal action," the function in nearly all the cases being, it was said, "merely to keep the wheel in the wind." In the eighth circuit, the court, accepting it as true that prior to Martin's invention all windmills had been driven by external gearings, held that, though the like use of such gearings in other machines had long been familiar, the adaptation or transfer thereof to the windmill evinced invention; and the court below, on proof that such gearing had been in common use in windmills, but not in immediate connection with the driving shaft or to produce reciprocating motion,

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was constrained, as already explained, to hold that the difference between the cases was not such as to justify a different conclusion. It may be that the presence of the internal gearing in other parts of a windmill ought to be regarded as of little or no more significance in respect to the particular combination covered by Martin's claim than such gearing in familiar use in machines used for sawing wood, mowing and other purposes, especially since in some of the latter the use was to produce reciprocating motion; but in view of the fact that in the windmill of Perkins and in numerous others, on which patents had been granted before the date of Martin's application, external and internal gearing were in common use side by side, we find it impossible to credit with invention a patentee who did nothing but put one of the forms in the place of the other in a machine where both were already present, producing by the change
601 no new result but only improved effects or relative advantages long known to mechanics to be the result of using that form instead of the other. Such an exchange or substitution of one of two forms of gearing for another in a machine, where both are in familiar use side by side, is no more to be called invention than would be the substitution under like circumstances of one familiar make of pulley for another.

The customary reference has been made to such cases as *Crane v. Price*, Webster's Pat. Cas., 393, 409; *Western Electric Company v. La Rue*, 139 U. S., 601, and *Potts v. Creager*, 155 U. S., 597, but the distinction is clear. In *Crane v. Price* the discovery was of the susceptibility of anthracite to the action of the hot blast; 1 Robinson on Patents, sec. 266, *n*. Martin discovered no new quality in internal gear-wheels, and applied them to no use which can be properly called new. In *Western Electric Co. v. La Rue* the invention related to telegraphic keys and consisted "in substituting for the trunnions or pivots upon which the lever vibrates a torsional spring or strip of metal"—the spring not only taking the place of the pivots or trunnions, but when used in connection with certain adjusting screws taking the place of the ordinary retractile spring. The court, after stating that there was nothing in the exhibits in the case to show "the use of the torsional spring in a telegraphic instrument" and that the invention "did not seem to be one of great importance," said: "We think the adaptation of this somewhat unfamiliar spring to this new use, and its consequent simplification of mechanism, justly entitles the patentee to the rights of an inventor." There was there not simply the substitution of one known form of spring for another. The retractile spring was displaced by the torsional spring, and if there had been nothing more it would have been essentially like the putting of the internal gear-wheel in the place of the external; but the replacement of a fixed and inflexible pivot or trunnion with a torsional spring was an essentially different achievement, rising, as the Supreme Court considered, to the dignity of invention. But that conclusion, it is to be observed, was reached on the grounds that the torsional spring was somewhat unfamiliar, had never before been employed in a telegraphic instrument, and as introduced subserved a new use.

Here, the contrary is true in every particular. The internal gearing, its effect, and its relative advantages over the other form had been familiar; it had been in use in windmills side by side with the external wheel, and if as employed in the Martin combination it served a use which in any sense was new, it was in the language of the opinion in *Potts v. Creager*, "so nearly analogous to the
602 former one that the applicability of the device to its new use would occur to a person of ordinary mechanical skill."

It is not perceived that further proofs are possible of a character to change the result. The decree or order below is therefore reversed, with directions to dismiss the bill for want of equity.

And afterwards, on the same day, to wit: on the twenty-sixth day of July, 1898, in the October term aforesaid, the following further proceedings were had and entered of record, to wit:

TUESDAY, *July* 26, 1898.

Before Hon. William A. Woods, circuit judge; Hon. John W. Showalter, circuit judge; Hon. Romanzo Bunn, district judge.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS & COMPANY. } 486.

Appeal from the circuit court of the United States for the northern district of Illinois, northern division.

This cause came on to be heard on the transcript of the record from the circuit court of the United States for the northern district of Illinois and was argued by counsel.

On consideration whereof it is now here ordered, adjudged and decreed, by this court, that the decree of the said circuit court in this cause, be, and the same is hereby reversed with costs; and that this cause be, and the same is hereby remanded to the said circuit court with directions to dismiss the bill for want of equity; and that the said complainant, Stover Manufacturing Company, recover against the said defendant for their costs herein expended and have execution therefor.

603 And afterwards, on the same day, to wit: on the twenty-sixth day of July, 1898, in the October term aforesaid, the following further proceedings were had and entered of record, to wit:

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TUESDAY, *July* 26, 1898.

Before Hon. William A. Woods, circuit judge; Hon. John W. Showalter, circuit judge.

STOVER MANUFACTURING COMPANY
vs.
MAST, FOOS AND COMPANY. } 486.

Appeal from the circuit court of the United States for the northern district of Illinois, northern division.

Upon application of counsel for appellee, it is ordered by the court, that mandate in this cause be stayed until October 3, 1898.

And afterwards, to wit: on the thirteenth day of September, 1898, in the October term aforesaid, came the appellee, by its counsel, Mr. Lysander Hill, and filed in the office of the clerk of said court, a præcipe for transcript of record, said præcipe being in the words and figures following, to wit:

CHICAGO, *Sept.* 13, 1898.

Clerk U. S. C. C. A., 7th circ't, Chicago, Ill.

DEAR SIR: You will please prepare immediately a certified transcript of the record in *Mast, Foos & Co. v. Stover Mfg. Co.*, for use on an application for *certiorari* at the beginning of the October term of the Supreme Court.

Yours truly,

L. HILL,
For Mast, Foos & Co.

604 United States Circuit Court of Appeals for the Seventh Circuit.

I, Oliver T. Morton, clerk of the United States circuit court of appeals, for the seventh circuit, do hereby certify that the foregoing printed and typewritten pages, numbered from 1 to 603, inclusive, contain a true copy of the transcript of the record and proceedings in the United States circuit court of appeals for the 7th circuit in the case of *Stover Manufacturing Company v. Mast, Foos and Company*, No. 486, October term, 1897, as the same remains upon the files and records of said United States circuit court of appeals, for the seventh circuit.

In testimony whereof I hereunto subscribe my name and affix the seal of said United States circuit court of appeals, for [SEAL.] the seventh circuit, at the city of Chicago, this third day of October, A. D. 1898.

[Seal United States Circuit Court of Appeals, Seventh Circuit.]

OLIVER T. MORTON,
Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.

605 UNITED STATES OF AMERICA, *ss:*

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the honorable the judges of the United States circuit court of appeals for the seventh circuit, Greeting:

Being informed that there is now pending before you a suit in which Stover Manufacturing Company is appellant and Mast, Foos & Company is appellee, which suit was removed into the said circuit court of appeals by virtue of an appeal from the circuit court of the United States for the northern district of Illinois, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said circuit court of appeals and removed into the Supreme Court of the United
606 States, do hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, the 25th day of October, in the year of our Lord one thousand eight hundred and ninety-eight.

JAMES H. McKENNEY,
Clerk of the Supreme Court of the United States.

607 [Endorsed:] Supreme Court of the United States. No. 430, October term, 1898. Mast, Foos & Company *vs.* Stover Manuf'g Co. Writ of certiorari. Filed Oct. 28, 1898. Edward M. Holloway, clerk.

UNITED STATES OF AMERICA, *Seventh Circuit,* } *ss:*

In obedience to the command of the foregoing writ of certiorari and in pursuance of the stipulation of the parties, a full and true copy of which is hereto attached, I do hereby certify and return that the transcript of the record filed with the application to the Supreme Court of the United States for a writ of certiorari in the case of Stover Manufacturing Company, appellant, *vs.* Mast, Foos & Company is a full, true, and complete transcript of the record upon which said cause was heard in the United States circuit court of appeals, together with all proceedings in said court.

Seal United States Circuit Court of Appeals, Seventh Circuit.

In testimony whereof I hereunto subscribe my name and affix the seal of said United States circuit court of appeals for the seventh circuit, at the city of Chicago, Illinois, this twenty-ninth day of October, A. D. 1898.

EDWARD M. HOLLOWAY,
Clerk U. S. Circuit Court of Appeals, Seventh Circuit.

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608 Supreme Court of the United States, October Term, 1898.

MAST, FOOS & CO.
vs.
STOVER MANUFACTURING CO. } No. 430.

Stipulation.

It is hereby stipulated that the certified copy of the transcript of record on file may be taken as a return to the writ of certiorari granted by the Supreme Court October 25th, 1898.

It is further stipulated that the case shall be heard on said record, accompanied by the exhibits used before the circuit court of appeals for the seventh circuit.

Chicago, October —, 1898.

L. HILL, *Counsel for Petitioner.*
CHARKES K. OFFIELD,
CHARLES C. LINTHICUM,
Counsel for Respondent.

Endorsed: United States circuit court of appeals, seventh circuit. Stover Manufacturing Co., appellant, *vs.* Mast, Foos & Co., appellee. Stipulation. Filed Oct. 28, 1898. Edward M. Holloway, clerk.

609 Endorsed: Case No. 17,015. Supreme Court U. S., October term, 1899. Term No., 149. Mast, Foos & Co., petitioner, *vs.* Stover Manufacturing Co. Writ of certiorari and return. Filed Oct. 31, 1898.

610 In the Supreme Court of the United States, October Term, 1899.

MAST, FOOS & COMPANY
vs.
STOVER MANUFACTURING COMPANY. } No. —.

Mr. James H. McKenney, clerk Supreme Court of the United States.

DEAR SIR: In the above-entitled case it is agreed between counsel for the opposing parties that the clerk may omit from the record and the printer omit from the printing of the record the matter included in the record below from pages 116 to 580, inclusive, said matter consisting of copies of patents, which are to be substituted by original copies from the Patent Office.

Yours respectfully,

L. HILL,
H. A. TOULMIN,
Counsel for Complainant.
C. K. OFFIELD,
C. C. LINTHICUM,
Counsel for Defendant.

Chicago, September 23, 1899.

611 [Endorsed:] Case No. 17,015. Supreme Court U. S., October term, 1899. Term No., 149. Mast, Foos & Co., petitioner, *vs.* Stover Manfg. Co. Stipulation to omit parts of record in printing. Filed Sept. 28, 1899.

Endorsed on cover: Case No. 17,015. U. S. C. C. of appeals, 7th circuit. Term No., 149. Mast, Foos & Company, petitioner, *vs.* Stover Manufacturing Company. Filed October 10, 1898.

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Office Supreme Court U. S.
FILED
OCT 10 1898
JAMES H. McKENNEY,
Clerk.

Supreme Court of the United States.

OCTOBER TERM, A. D. 1898.

IN THE MATTER OF THE APPLICATION OF MAST, FOOS & CO. FOR THE WRIT OF CERTIORARI UNDER SECTION 6 OF THE ACT OF CONGRESS APPROVED MARCH 3D, 1891, CREATING THE CIRCUIT COURT OF APPEALS.

TITLE OF THE CAUSE HEREIN:

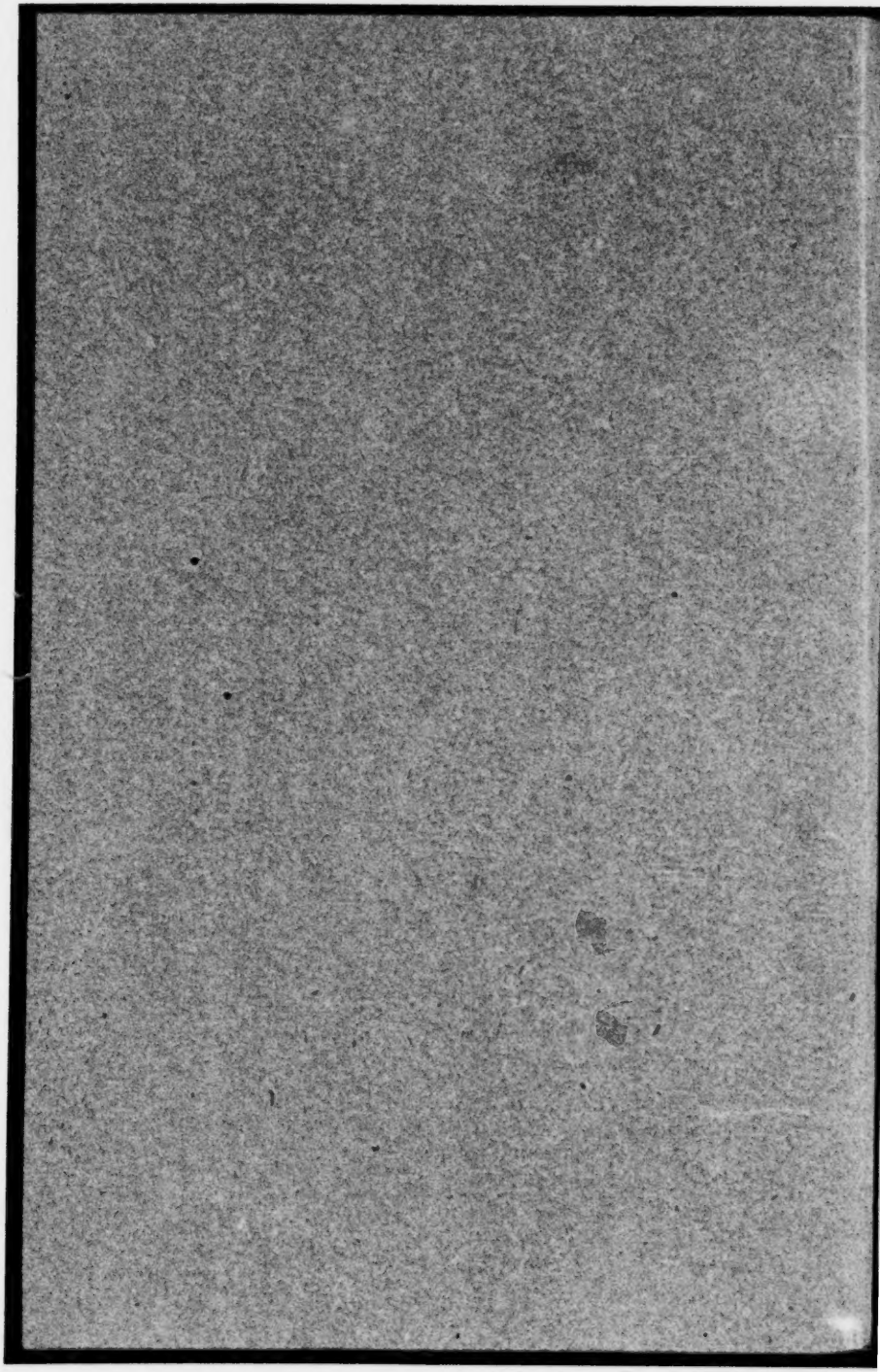
STOVER MANUFACTURING CO., *Appellant.*
v.
MAST, FOOS & COMPANY, *Appellee.*

In the C. C. A. for the Seventh Circuit. No. 486.

PETITION AND BRIEF:

H. A. TOULMIN.
LYSANDER HILL,
Counsel for the Petitioner.

THE T. E. HARWOOD PRINT. & PUB. CO.



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TO THE SUPREME COURT OF THE UNITED STATES OF AMERICA:

The petition of Mast, Foos & Co., for a writ of certiorari, directed to the United States Circuit Court of Appeals for the Seventh Judicial Circuit, under the provisions of Section 6 of the act of Congress, approved March 3rd, 1891, and ordering that the records in a certain appeal be certified to this Honorable Court for its review and determination.

Said appeal is entitled as follows:

Stover Manufacturing Co., Defendant and Appellant, v. Mast, Foos & Co., Complainant and Appellee, No. 486 in said Circuit Court of Appeals.

STATEMENT OF CASE.

And your said petitioner thereupon respectfully shows this Honorable Court, as follows:

First. Your petitioner is, and at the time hereinafter mentioned was, an inhabitant of the State of Ohio, and a corporation organized under the laws of said state.

Second. Your petitioner, complainant therein, brought suit by bill in equity in the U. S. Circuit Court for the District of Nebraska, for infringement of certain letters patent of the U. S. against the Dempster Mill Mfg. Co., an inhabitant of the State of Nebraska, and a corporation organized and doing business under the laws of said state of Nebraska. Bill filed Oct. 22nd, 1894.

Third. The patent for infringement of which said suit was brought and prosecuted is letters patent of the U. S. No. 433,531, granted August 5th, 1890, upon the application of Samuel W. Martin, for Improvements in Windmills, and issued to your petitioner, the title whereof was, at the time of bringing said suit, and now is, duly vested in your petitioner, complainant therein. Infringement was charged of claim 1 only of said patent.

Fourth. In due time, said case came on for hearing on bill, answer, replication and proofs, and was argued before the Honorable Oliver P. Shiras, holding said Circuit Court. An opinion therein was subsequently rendered by his Honor, Judge Shiras, and a decree was entered in conformity therewith—holding that the said letters patent No. 433,531 were void, and dismissing the bill, on the ground that the invention had been abondoned before the issue of the patent.

The opinion of the Court therein is reported in 71 Fed. Rep. 701.

Fifth—Thereupon your petitioner appealed to the Circuit Court of Appeals for the 8th Circuit, wherein said cause was entitled, Mast, Foos & Co. appellant, v. Dempster Mill Mnfg. Co, appellee, No. 799, May term A. D. 1897.

Sixth—The said bill came on for hearing in said Court of Appeals before the Honorable Circuit Judges Caldwell, Sanborn and Thayer, and was argued in said Court by counsel for both parties, upon bill, answer, replication and proofs.

Subsequently, on or about Aug. 2nd, 1897, the opinion of that Court of Appeals was rendered therein by his Honor, Judge Sanborn, reversing the decree of the Circuit Court, sustaining said first claim of the said patent,

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and the charge of infringement, and awarding an injunction and an accounting.

A copy of this opinion of the Circuit Court of Appeals for the 8th Circuit is hereunto annexed.

It is reported in 49 U. S. App. 508; 27 C. C. A. 901.

Seventh. The said Martin patent, No. 433,531, is confessedly the "ground floor" or "pioneer" patent for the modern "Internal-gear Pumping Windmill", as will affirmatively appear by said decision of said Court of Appeals; a conclusion not shown to be other than true by anything in the record or decision in this cause wherein your petitioner now prays for said writ of certiorari.

Eighth—Later, viz. in November 1897, your petitioner brought another suit on said letters patent No. 433,531 in the U. S. Circuit Court for the Western District of Wisconsin against the Duplex Mfg. Co., an inhabitant of said state of Wisconsin, and a corporation organized under the laws of said state, which cause is entitled Mast, Foos & Co., v. Duplex Mfg. Co., and is now pending in said Court on an interlocutary motion upon a question of multifariousness in that bill of complaint, and after the decision of such question, such cause will be ready to be proceeded with on its merits, such motion being pending before his Honor, Judge Bunn; (who also sat in the Appellate Court and concurred in the opinion herein relative to which this petition is filed).

Subsequently, viz., also in the said month of November 1897, your petitioner, as complainant, brought suit in the cause touching which this petition is now filed, in the U. S. Circuit Court for the Northern District of Illinois, entitled Mast, Foos & Co. complainant, v. Stover Mfg. Co. defendant. On motion for a preliminary injunction by your petitioner, complainant, against said

Stover Mfg. Co., defendant, heard December 6th and 7th, 1897, and further heard January 4th and 5th, 1898, such preliminary injunction was allowed January 31st, 1898, by his Honor, Judge Grosscup.

In deciding said motion Judge Grosscup stated that within the ruling of the Circuit Court of Appeals for the 8th Circuit, in the Dempster case, the device of the Stover Mfg. Co. was clearly an infringement, and then said:

> "The only question left is whether this Court shall follow the judgment of the Circuit Court of Appeals, both with respect to the validity of the patent and its scope."

He then stated the substance of the decision of the Circuit Court of Appeals, for the 8th Circuit, and said:

> "Without questioning the soundness of the Court's judgment upon the question of whether a patentable invention was shown, I can on this motion, only inquire if, in all probability, that judgment would have been changed had credible new evidence—such as is before me—been before the Court of Appeals."
>
> "That evidence goes to two points: 1st, That the internal-gear feature of the Martin patent was anticipated in previous patents. 2ndly. That it was anticipated by prior use." (Opinion p—this petition).

The learned Judge then stated that after examination all the previous patents which had been cited, he did not feel that the information which they contained, if it had been furnished to the Circuit Court of Appeals in the 8th Circuit, would have changed its judgment, saying:

> "I do not feel that the presence of this information in the mind of the Court of Appeals would have changed its judgment respecting the validity of the patent." (Opinion p[illegible] this petition. Reported in 85 Fed. Rep. 782).

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Ninth. This cause was taken by said Stover Manufacturing Co., under the 7th section of the act approved March 3rd, 1891, to the Circuit of Appeals for the 7th Circuit, on appeal from said preliminary injunctional order, and there heard, by the Honorable Circuit Judges Woods and Showalter and the Honorable District Judge Bunn, on a record composed of affidavits by both parties, copies of prior patents, and a woodcut of an alleged mill of one Perkins; and after being argued by counsel for the respective parties, to-wit, on May 2nd and 3rd 1898, the same was taken under advisement by the said Court of Appeals, and a decision therein was rendered by said Court, through Judge Woods, on or about July 26, 1898. A copy of this decision is hereto appended; p[illegible] of this petition.

This decision of the said Circuit Court of Appeals for the 7th Circuit, held said 1st claim of said patent invalid, reversed the decision of his Honor, Judge Grosscup, *and then dismissed the bill entirely for want of equity*; and so concluded, then and there, and in this manner, the whole case, without a regular trial.

Tenth. That, as appears by the foregoing decisions and opinions, the Circuit Court of Appeals for the 8th Circuit, has adjudicated and declared, in one suit brought by your petitioner, that the first claim of your petitioner's patent No. 433,531 is a valid claim, covering and protecting a legitimate and valuable subject-matter and combination—one that is novel, is an improvement over prior devices, and a product of the inventive faculty; and the Circuit Court of Appeals for the 7th Circuit, in another suit brought by your petitioner, on your petitioner's said patent, No. 433,531, has adjudged and declared, that said first claim is invalid, does not cover subject-matter which can be lawfully claimed, is not novel, is

not an improvement over prior devices, and is not a product of the inventive faculty.

Eleventh. That the subject of said 1st claim is of great value and importance to your petitioner; is involved in three other suits, as appears herein; is being infringed by still other parties in said 7th Circuit and elsewhere; is an important and vital part of the windmills your petitioner is manufacturing and selling throughout the United States—an enterprise in which it has invested, and now has tied up, large sums of money, and that the subject-matter of said 1st claim is depended upon by your petitioner to supply a large and increasing demand for this special type of windmills.

Twelvth. Your petitioner further shows that said decisions or adjudications in the Circuit Court of Appeals for the 7th and 8th Judicial Circuits, are at variance and in conflict with each other, and the errors of the one or the other of them can only be authoritatively corrected in this Honorable Court.

Also, that other matters of law decided as aforesaid by said Circuit Court of Appeals for the 7th Circuit are at variance with sundry decisions of this Honorable Court, as well as of other Circuit Courts of Appeals in other Circuits, and at variance with the "course and principles of courts of equity"; and that any errors made therein can only be authoritatively corrected in this Honorable Court.

And your petitioner here briefly instances the action of said Circuit Court of Appeals for the 7th Circuit, in dismissing your petitioner's said bill, upon the hearing of such interlocutory motion, so based upon affidavits, without any opportunity by your petitioner, under the universal right, to confront the opposing affiants with the test of cross-examination, and without full opportu-

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nity to rebut; and all this upon conclusions at variance with the previous adjudication and judgment on final hearing by the Circuit Court of Appeals for the 8th Circuit upon bill, answer, and replication, and proofs taken by the examination and cross-examination of the witnesses for both parties—with your petitioner's prima facie evidence duly adduced, with the defendant's testimony in chief and in reply duly adduced; and your petitioner's rebuttal likewise duly adduced.

Thirteenth. Your petitioner further represents that the matters as to which the Circuit Court of Appeals for the 7th Circuit has so adjudicated adversely to your petitioner, and more particularly the matters as to which said decision is in conflict with the decision made by the Circuit Court of Appeals for the 8th Circuit, with decisions of this Court, and with the general right of parties to have a trial on the merits of their cases, are of such a nature that, if they are not corrected, the rights of your petitioner, as it is advised by its counsel (and verily believes) will suffer irreparable injury.

Your petitioner further represents that the irreparable injury to which it will be subjected by reason of this adverse, and, as your petitioner believes, erroneous decision of the Circuit Court of Appeals for the 7th Circuit, is particularly apparent because the invention of its patent No. 433,531, is a vital part of its windmills, as sold throughout the U. S., and in most of the judicial districts of the U. S.

Infringements of said patent No. 433,531 now, in fact, exist, and are likely to continue to occur, in many different states of the Union; and it will be an irreparable and almost an intolerable source of injury to your petitioner if its said patent which, as it verily believes, covers and protects it in the exclusive enjoyment of an inven-

tion of the character described, should be rendered, or thus left, practically inoperative and inefficient for its protection; because while its validity has been sustained by the Circuit Court of Appeals for one Circuit, its validity has been denied by the Circuit Court of Appeals for another Circuit, in both of which Circuits other suits on it are now pending and undecided.

Such a condition of conflicting decisions it is the proper province of this Honorable Court, as your petitioner is advised, to correct and obviate.

Fourteenth. Your petitioner further says that such other pending suits upon its patent 433,531, besides that named in Par. 8th, of this petition, are: Mast, Foos & Co., Complainant, vs. David Bradley & Co., Defendant, an Iowa corporation, in the United States Circuit Court for the Southern District, Western Division, of Iowa, brought on or about March 24th, 1898, and in which a preliminary injunction has been awarded your petitioner, by his Honor, Judge William H. Munger, and is now in force; and Mast, Foos & Co., Complainant, vs. Crane-Churchill & Co., Defendant, a Nebraska Corporation, brought in the United States Circuit Court for the District of Nebraska,on or about the 24th day of March, 1898. In the former case, we have a preliminary injunction; in the latter case we have been enjoined from applying for a preliminary injunction—enjoined not by the Court in which the case is pending, but by the Circuit Court for the Northern District of Illinois, in an order entered in the case here at bar, on the ground that the Crane-Churchill Co. are jobbers who purchase and sell infringeing windmills made by the Stover Mfg. Co., and covered by the appeal bond of the latter company in the present case. We deem it perfectly clear that the Circuit Court for the Northern District of Illinois had no jurisdiction

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or authority to make such an order, and that, even if it had jurisdiction to make it, the order is contrary to law, and would be annulled by this Honorable Court if the case is brought here on certiorari, it being in violation of the principle established in *Birdsell* v. *Shalial*, 112 U. S. 485, *Callahan* v. *Myers*, 128 U. S. 617,665, and *Edison El. Light Co. et. al.* v. *Phila. Trust, Safe, Deposit and Ins. Co.* 60 Fed. Rep. 397, 8. The Crane-Churchill Co. is making *jobber's profits*, both on sales and resales, for which the Stover Mfg. Co. is not liable, which are therefore not covered by said bond, and which we have, under said decisions last above cited, a clear right to sue for and recover in the suit brought, as above stated, directly against the jobbers. A copy of the order of the Circuit Court for the Northern District of Illinois enjoining us from proceeding against said jobbers, is as follows:—

"UNITED STATES CIRCUIT COURT,

"NORTHERN DISTRICT OF ILLINOIS.

"MAST, FOOS & CO.
"vs.
"STOVER MFG. CO. } IN EQUITY.

"This cause coming on to be heard before the "Court on defendant's motion to restrain complain- "ant from prosecuting and bringing suits for in- "fringement of the patent herein against agents and "representatives of defendant who sell wind mills "*purchased* from defendant. * * * *

"It is ordered as follows: That the supersedeas "bond allowed herein protects defendant's said agents "and representatives as to windmills *purchased* by "them from defendant herein, since Feb. 2, 1898, "(date of said appeal bond.) * * * *

"That said effect of said bond shall *operate during "the pendency of the appeal* to the Circuit Court of "Appeals for the Seventh Circuit lately taken by "defendant herein from an order of this Court award- "ing a preliminary injunction to the complainant "against the defendant, such injunction being super- "seded and such bond accepted in lieu thereof.

"Approved April 11, 1898."

All this was the state of your petitioner's litigation under its patent 433,531, when the decision of said Circuit Court of Appeals for the 7th Circuit, in consequence of which this petition is made, was rendered.

ASSIGNMENTS OF VARIANCE AND ERROR.

THE FOLLOWING ARE THE PRINCIPAL MATTERS OF VARIANCE IN THE HOLDINGS OF THE CIRCUIT COURT OF APPEALS FOR THE EIGHTH AND SEVENTH CIRCUITS, RESPECTIVELY, AND THE ERRORS OF THE LATTER:

1. In dismissing the bill, the Circuit Court of Appeals for the Seventh Circuit *transcended its jurisdiction as a Court of Appeals,* by deciding a vital question that had not been, and could not be decided by the Court below. There had been and could be no hearing or decision in the Circuit Court on the merits, because no evidence had been taken, and the merits of the case were, therefore, not before that court. The only question that could be or was determined by the Circuit Court was the question *whether a preliminary injunction should be granted.* This was, therefore, the only question carried up by the appeal. Hence, in proceeding to determine the merits of the whole bill, the Circuit Court of Appeals acted on a question not appealed to it, and acted not as a Court of Appeals, but as a Court for the trial of cases in the first instance. In doing this, it misunderstood and misapplied

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Smith v. Vulcan Iron Works, 165 U. S., 518, where the Circuit Court was authorized to decide, and did decide, the merits of the whole case, and where, consequently, the appeal brought up the whole case. The doctrine of that case does not apply to a mere motion for preliminary injunction based upon *ex parte* affidavits; and it was error for the Court of Appeals here to hold the contrary.

2. That it was error of law for the Circuit Court of Appeals for the Seventh Circuit to *dismiss* this bill, and so put your petitioner out of court, upon mere *ex parte affidavits;* which decision, while a *final* decision on the *merits*, was rendered without a trial "according to the course and principles of courts of equity," (R. S. Secs. 629 and 4921); and was also a decision at *variance* in its holding with the decision of the Circuit Court of Appeals for the Eighth Circuit.

3. That it was error of law for the Circuit Court of Appeals for the Seventh Circuit to make this *final* decision on the *merits* without affording your petitioner the right of trial on evidence-in-chief and in rebuttal, taken by the examination and cross-examination of witnesses, as provided in Rules 67 and 68, prescribed by this Honorable Court for the guidance and direction of the Circuit Courts of the United States; and which decision was also at variance in its holding with the decision of the Circuit Court of Appeals for the Eighth Circuit.

4. That it was error of law for the Circuit Court of Appeals for the Seventh Circuit to make this *final* decision on the *merits*, without allowing your petitioner the right of trial of its cause, as guaranteed by the *general law*, and prescribed by the *jurisprudence*, of the land; such error being, in a sense, the deprivation of property without "due process of law"—"The better and larger

definition of 'due process of law' is, that it means law in its *regular course of administration through courts of justice.*" (2 Kent Com. 13.)

> "Due process of law implies the right of the person "affected thereby to be present before the tribunal "which pronounces judgment of life, liberty, or "property, in its *most comprehensive* sense, to be "heard, by *testimony* or otherwise, and to have the "right of *controverting* by *proof*, every material fact "which bears on the question of right in the matter "involved." (Zeigler vs. S. & N. Ala. R. Co., 58 Ala. 599.)

This matter of error by said Circuit Court of Appeals for the Seventh Circuit has taken away from your petitioner this right of trial, by dismissing your petitioner's bill on the merits while only the matter of a preliminary injunction was before said Court upon ex parte affidavits, and while answer and replication (raising the general issue) were on file in the Circuit Court and the cause was awaiting proof in the regular course—all this was taken away by this summary dismissal; and which was at variance in its holding with the judgment upon the merits rendered on *final* hearing upon *full proof* by the Circuit Court of Appeals for the Eighth Circuit.

5. That it was error of law for the Circuit Court of Appeals for the Seventh Circuit to *so* dismiss your petitioner's bill on the *merits* upon a mere *motion* for a *preliminary injunction*, while the same matter of right, the validity of claim 1, of the Martin patent No. 433,531, had already been *sustained* on *final* hearing by the Circuit Court of Appeals for the Eighth Circuit, as such course has, without trial, displaced a right previously sustained by a regular judgment; thereby also creating a variance on a matter of right not merely prima facie, but on one also supported by a judgment founded on a final hearing,

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and which variance is repugnant to the wholesome rule of *comity* between the Federal Courts, necessary to the proper administration of the Patent Laws as one homogeneous system applicable alike in respect of the patents granted under it in all the judicial circuits of the country. All of which errors and matters of variance have wrought injuries irreparable to your petitioner unless corrected by this Court.

6. That it was error of law for the Circuit Court of Appeals for the Seventh Circuit to hold, as it did, that your petitioner's said patent was void in view of certain alleged things contained, (as the opinion says) in defendant's ex parte affidavits; in other words, it was error to hold that these mere affidavits, which are not legal evidence for such purpose, render its said patent void. We submit that it was incompetent for the Court to so hold on affidavits. It did not find the patent void on its face, yet proceeded to, and did, pronounce a judgment of invalidity on these ex parte affidavits. The result was irregularity in procedure and variance with the earlier decision of the Court of Appeals for the Eighth Circuit.

7. The Circuit Court of Appeals for the Seventh Circuit denies the advantages of the Martin internal gear combination or invention. This was upon affidavits, in dismissing the bill.

The Circuit Court of Appeals for the Eighth Circuit affirms the advantages of the Martin internal-gear combination or invention This was upon regular proofs in sustaining the bill.

(A.) Thus the Circuit Court of Appeals for the Seventh Circuit says:

> "It is evident too that the supposed defects of the "external gearing had been exaggerated; that their "tendency to friction and to wear and tear, if con-

"structed with adequate strength and properly "adjusted, is not essentially different from that of "the former, (the internal gear) and if cogs have ever "been stripped off it was due to faulty construction "or mal-adjustment."

But the Circuit Court of Appeals for the Eighth Circuit had said :

"All the witnesses on both sides of the case tes- "tify that the combination of the internal-toothed "spur-wheel with the pinion and the other usual "machinery of a windmill and pump is more useful "and more valuable than any other combination of "elements in a windmill and pump yet discovered." "* * * *

'Prior to this invention, all windmills had been "driven by external-toothed spur-wheels. As the "cogs on the spur-wheel and pinion and the other "parts of the machinery wore away, the spur-wheel "and the pinion drew apart, and as the pitman con- "nection passed over the center and the motion "changed from a pulling to a pushing one, or vice "versa, a pounding and racking of the machinery "arose which shortened its life and sometimes "stripped the cogs from the pinion. The object of "Martin's invention was to do away with this pou d- "ing and to prevent this wear and strain of the "machinery. He accomplished this by throwing "aside the external-toothed spur-gear and combining "an internal-toothed spur-wheel with the pinion and "the other necessary elements of the windmill, so "that, as he says, 'a plurality of the pinion-teeth "are always engaged with the internal spur-gear, "resulting in giving a perfectly uniform and smooth "and noiseless motion to the actuating rod, thereby "prolonging the life of the machine by saving it "from constant jarring and preventing wear and "tear.' The evidence is undisputed that this inven- "tion completely accomplished its purpose." (P. 31 this petition.)

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(B.) The Circuit Court of Appeals for the Seventh Circuit *denies* the patentable novelty of the Martin internal gear combination and finds that *only* mechanical skill was exercised by Martin, and says it was *not* strange that the improvement was not sooner made. This was upon ex parte affidavits, in dismissing the bill.

The Circuit Court of Appeals for the Eighth Circuit *finds* patentable novelty in the Martin internal gear combination, and holds that *more* than mechanical skill was exercised by Martin, and that if only mechanical skill was exercised *it was* strange that the improvement was not sooner discovered. This was upon regular proofs, in sustaining the bill.

Thus the Court of Appeals for the Seventh Circuit says:

> "And instead of it being true here, as in the "Dempster case, that the alleged infringer appro- "priated Martin's construction after seeing it in "operation, the testimony of the President of the "Stover Company is that the adoption by that com- "pany of the internal gear for operating the actuat- "ing rod of its windmill was a mere accident or "incident * of construction in the first instance, with- "out any knowledge of the Martin patent or mech- "anism, and was accomplished simply by transferring "the internal gear from other machines made by the "company side by side with its windmills, such as "power feed mills driven by horse power. No reason "is shown to discredit this testimony, and it follows "that if Martin made an invention, the appellant is

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* NOTE.—But the Stover Company's letter of November, 1892, replying to a notice of infringement, says: "Thus far we have done but little else than *experiment* with an internal gear, and as the windmill season is about over for 1892, and as we have made but one pattern, and this for a size of mill little in demand, your clients (meaning this petitioner) need have nothing to fear for some time to come from this source." This *experimenting* and this having made but *one pattern* thus far, do not look much like accident or incident, in transferring the internal gear from other machines, as a feed mill driven by horse power.

"entitled to the credit of making the same discovery. "*The more reasonable conclusion is, as it seems to us,* "*that neither can be credited with the exercise of more* "*than ordinary mechanical skill.* That the internal "gearing employed to actuate the pitman of a wind- "mill has some advantages, and therefore may be "properly called an improvement over external gear- "ings, there can be no doubt, but in a windmill the "advantages are not different in kind from what "they are in other machines which have a dead point, "the passing of which involves a constant change "from pulling to pushing and vice versa in the "application of the operative force.

"The advantages are the same 'relative advantages' "which, it is conceded, had been familiar to mechan- "ics time out of mind. That the improvement was "not incorporated in windmills sooner, on the proof "here made, is not strange."

But the Court of Appeals for the Eighth Circuit had said:

"Finally, the counsel for the appellee argued that "there is no patentable novelty in the combination "described in this claim, because internal toothed "spur-wheels were old and well known and the sub- "stitution of them for external-toothed spur gear in "the machinery of windmills was nothing but a "*double use.* This argument is always plausible and "pursuasive where old elements have been combined "to produce a new or better result. Each element "taken by itself has its old effect and it is always "difficult to understand how it was that the practiced "eyes of skilled mechanics did not at once see and "apply the necessary remedy to the troublesome evil "which the invention removes.

"The fact, however, that such an evil long existed "and that no mechanic perceived or applied the "remedy is the most conclusive evidence that some- "thing more than his eyes and skill was required to "discover and apply the requisite device. * * * *

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"Windmills were old and their operation was "familiar to mechanics, but until that year" [the date of Martin's invention] "they went on pounding their "wheels with every stroke of the pump rod, wearing "themselves out prematurely and occasionally strip- "ping their pinions of cogs for the lack of the com- "bination of this internal-toothed spur-wheel with "the other essential elements ot their machinery. If "naught but the skill of the mechanic was required "to make this improvement, it is *passing strange* "that no mechanic ever made it until after Martin "discovered it."

(C.) The Circuit Court of Appeals for the 7th Circuit says, in a general way: "Proof of the prior art in this record is different and far more extensive than it was in the Dempster case." * * *

"It may be that the presence of the internal gear- "ing in other parts of a windmill ought to be regar- "ded as of little or no more than significant in re- "spect to the particular combination covered by "Martin's claim that such gearing in familiar use in "machines used for sawing wood, mowing and other "purposes, especially since in some of the latter the "use was to produce reciprocating motion; but in "view of the fact that in the windmill of Perkins "and in numerous others, on which patents had "been granted, before the date of Martin's applica- "tion, external and internal gearings were in com- "mon use side by side, we find it impossible to cre- "dit with invention a patentee who did nothing but "put one of the forms in the place of the other in a "machine where both were already present, produc- "ing by the change no new result but only improved "effects or relative advantages long known to me- "chanics to be the result of using that form instead "of the other. Such an exchange or substitution of "one or two forms of gearing for another in a ma- "chine where both are in familiar use side by side, "is no more to be called invention than would be

"the substitution under like circumstances of one "familiar make of pulley for another."

"The *customary* reference has been made to such "cases as Crane vs. Price, Webster's Patent Cases, "393,409, Western Electric Company vs. La Rue, "139 U. S., 601, and Potts vs. Creager, 155 U. S. "597 but the distinction is clear."

Thus of this "more extensive" record only the Perkins windmill is compared with the Martin patent, and that only in a general way; the rest of the quotation presenting no feature of the prior art not comprehended in the following statement of the prior art made by the Circuit Court of Appeals for the 8th Circuit.

Thus the Court of Appeals for the 8th Circuit had said:

"The defenses were that there was no novelty "or utility in the combination of the appellant "and that the appellee did not infringe it. In "support of these defenses the mill company intro- "duced in evidence letters patent 182,394, dated "September 19th, 1876, to Edward Williams, for a "new and improved wind mill. A number of other "letters patent were introduced from which it ap- "pears that internal toothed-gearing had been used, "long before Martin made his invention, to drive "pinions which actuated wood-saws, cutters of har- "vesting and mowing machines and like parts of "similar machinery." * * *

"It is true that the internal toothed spur wheels, "their effect and their relative advantages over "external-toothed wheels had been familiar to me- "chanics time out of mind."

"They had been used on mowing machines and "harvesting machines, on machines for sawing wood "and doubtless upon hundreds of other machines, "but no one had ever combined one of these inter- "nal-toothed wheels with the pinion, pitman and "pump of a windmill until Martin made his inven- "tion in the year 1889." PP29,33 this petition.

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So too, his Honor, Judge Grosscup, in comparing the prior art in the Dempster case with the prior art in the Stover case, said:

> "I am not convinced that the presence of the "Perkins device in the case before the Circuit Court "of Appeals (8th Circuit) would have changed its "judgment. On the contrary, I feel *sure* that the "Court, holding to its other postulates, would have "classed the Perkins device with the others referred "to, as being no such sufficient anticipation of the "*thought* embodied in the Martin invention as to "invalid its patentability."
>
> "The motion for an injunction, must, therefore, 'be sustained."

As to the patents recited in the statement by the Court of Appeals for 7th Circuit, but not mentioned in the opinion, and as showing that they too were within the art as known to and acknowledged by the Court of Appeals for the 8th Circuit, His Honor, Judge Grosscup also said:

> "I have looked carefully through all previous "patents brought specially to my attention as not "having been in the case in the 8th Circuit, and am "convinced that the internal gear shown in each of "them had no function relating to the driving of the "shaft or the creation reciprocal action. The func- "tion of the internal gear appliance in nearly all "these cases, was merely to keep the wheel in the "wind. I do not feel that the presence of this infor- "mation in the mind of the Court would have "changed its judgment respecting the validity of the "patent." P39 of this petition.

So that the conflict in the findings and judgment of the Circuit Court of Appeals for the 7th Circuit and for the 8th Circuit, respectively, is here again fully shown and illustrated, in addition to the conflict in the conclusions embodied in the extracts quoted above.

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(D) The Circuit Court of Appeals for the 7th Circuit asserts that the circumstances of infringement in the case before it were different from those attending the infringement in the Dempster case, as such circumstances are found and stated by the Circuit Court of Appeals for the 8th Circuit.

But the circumstances were (a) not materially different; and (b) if they were, they could not have changed the question of law as to the matter of invention or no invention in the combination of the Martin claim.

Thus the Court of Appeals for the 7th Circuit says: "In that case the record also disclosed and "the Court laid stress upon the fact that the presi- "dent of the infringing company, before abandoning "the external and adopting the internal gear, had "seen one of the mills made under the Martin patent "in operation, and had appropriated that form of "construction on the advice of its pattern maker who "had been in the employ of an earlier infringer."

(Opinion, p——this petition.) "And instead of "it being true here, as in the Dempster case, that the "alleged infringer appropriated Martin's construc- "tion after seeing it in operation, the testimony of "the president of the Stover Co. * is that the "adoption by that company of the internal gear for "operating the actuating rod of its windmill was a "mere accident or incident, of construction in the "first instance, without the knowledge of the Martin "patent or mechanism, and was accomplished simply "by transferring the internal gear from other ma- "chines made by the company side by side with its "windmills, such as power feed mills driven by horse "power. No reason is shown to discredit this testi- "mony, and it follows that if Martin made an inven- "tion, the appellant is entitled to the credit of mak- "ing the same discovery." Opinion p, 11—this peti- "tion.

* NOTE.—It must be kept in mind that there was no "testimony before the Court—nothing but mere *ex parte* affidavits.

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But your petitioner submits that it was error of law for said Court of Appeals for the 7th Circuit to thus hold that Martin did not make an invention when he produced the combination involved herein; and that it was error of fact for said Court to so find as above in view of the fact that the defendant company when notified of the infringement declared in reply per its letter of November, 1892, that it had "Thus far done little else than experiment with an internal gear." This said letter is in the transcript filed herewith.

(E) The Court of Appeals for the 7th Circuit denies patentability in the Martin combination embodied in his first claim, under Potts vs. Creager.

The Circuit Court of Appeals for the 8th Circuit holds that there is patentability in the Martin combination embodied in his first claim, under Potts v. Creager.

Thus the Court of Appeals in the 7th Circuit says:

> "The internal gearing, its effect, and its relative ad-
> "vantages over the other form had been familiar; it
> "had been in use in windmills side by side with the
> "external wheel, and if as employed in the Martin
> "combination it served a use which in any sense was
> "new, it was in the language of the opinion in Potts
> "vs. Creager, 'so nearly analagous to the former one
> "that the applicability of the device to its new use
> "would occur to a person of ordinary mechanical
> skill.' "

But the Court of Appeals for the 8th Circuit had said:

> "It is not infrequently a difficult and delicate
> "task to determine whether or not the application of
> "an old device to the production of a new or better
> "result rises to the dignity of an invention. Mr.
> "Justice Brown says, in Potts vs. Creager, 155 U. S.
> "597,608, that the result of the authorities upon this
> "subject is that if the new use be so nearly analo-
> "gous to the former one, that the applicability of the

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"device to its new use would occur to a person of "ordinary mechanical skill, it is only a case of dou- "ble use, but if the relations between them be "remote, and especially if the use of the old device "produce a new result, it may at least involve an "exercise of the 'inventive faculty.' The best evi- "dence that the application of the internal-toothed "spur-wheel to the new use of propelling the ma- "chinery of a wind mill would not occur to a person "of ordinary mechanical skill is that it did not occur "to any of them in all the years in which wind mills "had been in use before Martin discovered and "applied it. *Thompson v. Citizen's National Bank,* "10 U. S. App. 500, 512, 513; 3 C. C. A. 518, 522, "523; *Loom Co., vs. Higgins,* 105 U. S., 580,591; "*Consolidated Safety Valve Co., v. Crosley Steam Guage* "*and Valve Co.,* 113 U. S, 157, 179; *Magowan vs.* "*N. Y. Belting and Packing Co.,*141 U. S., 332, 341, "342; *The Barbed Wire Patent,* 143 U. S. 275, 281, 283. "Moreover, the combination of Martin immediately "went into general use. More than three thousand "wind mills which contained his combination, have "been manufactured and sold since 1890. * All "the witnesses testified to its advantages over the "old combination which contained the external- "toothed gear, and the fact that the appellee dis- "carded the latter and substituted the former, "demonstrates its utility and its advantages." (P 34—this petition.)

While in the Stover case that company had not discontinued using external gears on a part of its mills, it had nevertheless adopted this internal gear combination notwithstanding the supposed repugnance to enter upon new devices, and the disposition of manufacturers "to

* NOTE.—The evidence upon which the Court in the 8th Circuit made the statement that more than three thousand of the Martin wind mills had been sold, was taken in May, 1895. The patent is dated Aug , 1890. It was between those dates that these mills were sold; the beginning, and therefore the hardest part, of the introduction of the invention.

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let well enough alone," referred to in lines 44-47 of the opinion of the Court for the 7th Circuit. (P 31 this petition.)

And your petitioner respectfully further represents to your Honorable Court, that in said decision or opinion of said Circuit Court of Appeals for the Seventh Circuit, there are sundry and divers other errors, manifest on the record, material to the issues herein, but which cannot be made readily intelligible except by the use of the exhibits and by reference to the record—all aided by oral argument.

Finally, your petitioner avers that the present case is one in which it is proper for this Court to issue the writ of certiorari, for the following reasons, founded on the matters and things above recited:

1. The first, second, third, fourth, fifth and sixth assignments of and present a question of practice under error relate to the act of March 3, 1891, of far-reaching effect and importance—the question of an absolute dismissal of a bill on its merits, "for want of equity," (says the Court) without any trial on the merits; without any hearing other than a hearing of an interlocutory motion; without any evidence other than ex parte affidavits.

We submit that this is fore-judging a case, and is a *final* decision *before* and without trial. We know of no precedent for such a course; no Federal or State practice that gives it countenance or warrant.

We respectfully submit it was and is wrong—and can only be corrected for this case, and corrected in that court, that it may not happen again, there or elsewhere, by the interposition of this Honorable Court of last resort.

2. The seventh assignment of error and its divisions A, B, C, D and E, present a conflict of decisions by two Courts of Appeals upon a matter of law

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involved in the same identical question, namely:

Is claim 1 of the Martin patent void for want of invention, as decided by the Circuit Court of Appeals for the Seventh Circuit, July 26, 1898; or is that claim valid because an invention—the product of the inventive faculty, as decided by the Circuit Court of Appeals for the Eighth Circuit, Aug. 2, 1897?

A certified copy of the record of said case of Stover Mnfg. Co., appellant, v. Mast, Foos & Co., appellee, as referred to in said opinion of said Circuit Court of Appeals for the Seventh Circuit, is filed herewith as a part of this application.

Whereupon your petitioner respectfully prays that this Honorable Court will be pleased to grant a writ of certiorari, requiring the said case in the Seventh Circuit, No. 486, to be certified to this Honorable Court for its review and determination.

MAST, FOOS & CO.

By P. P. MAST, Pres.

SPRINGFIELD, OHIO, October, 1898.

H. A. TOULMIN,
LYSANDER HILL,

Of Counsel for Petitioners.

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UNITED STATES CIRCUIT COURT OF APPEALS

EIGHTH CIRCUIT.

No. 799.—MAY TERM, A. D. 1897.

Mast, Foos and Company, Appellant,
vs.
Dempster Mill Manufacturing Company, Appellee.

Appeal from the Circuit Court of the United States for the District of Nebraska.

Mr. H. A. Toulmin for Appellant.
Mr. H.W. Pennock and Mr. L. L. Morrison for Appellee.

Before CALDWELL, SANBORN and THAYER, Circuit Judges.

STATEMENT.

This is an appeal from a decree which dismissed a bill brought by Mast, Foos & Company, a corporation, for the infringement by the appellee, the Dempster Mill Manufacturing Company, a corporation, of letters patent No. 433,531, issued on August 5, 1890, to the appellant, as the assignee of Samuel W. Martin, for improvements in windmills. Here are copies of the drawings and specification of this patent:

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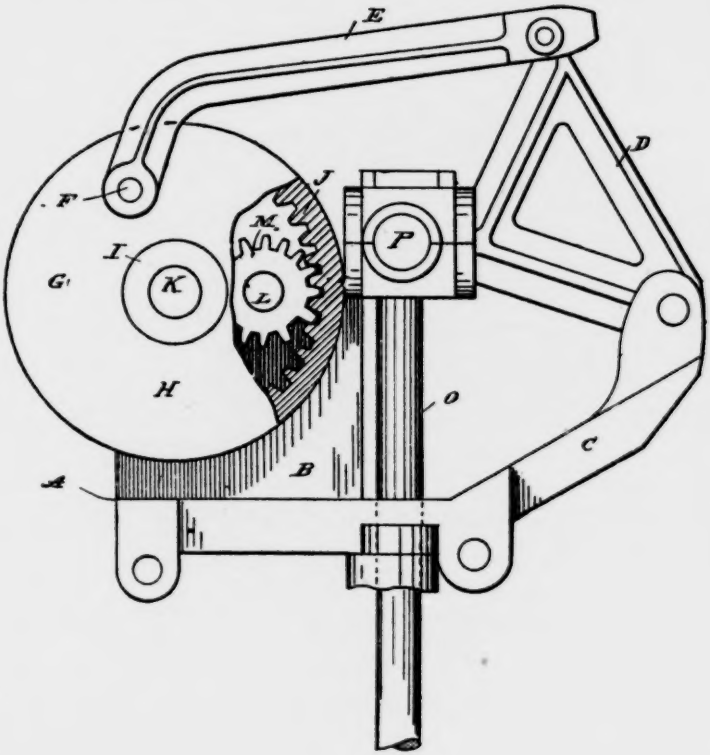
(No Model.)

S. W. MARTIN

WIND MILL.

No. 433,531. Patented Aug. 5, 1880.



WITNESSES

H. M. Plaisted.

Warren Hull.

INVENTOR

Samuel W. Martin.

By H. A. Toulmin

his Attorney.

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UNITED STATES PATENT OFFICE.

SAMUEL W. MARTIN, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE MAST, FOOS & COMPANY, OF SAME PLACE.

WIND MILL.

SPECIFICATION forming part of Letters Patent No. 433,531, dated August 5, 1890.

Application Filed May 2, 1890. Serial No. 350,281. (No Model.)

To all whom it may concern:

Be it known that I, SAMUEL W. MARTIN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Windmills, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in windmills.

The invention consists, essentially, of an improved back-gear organization involving an external-toothed pinion and an internal-toothed spur-gear, the pinion being mounted on the wheel-shaft and the gear having formed on or connected with it the wrist-pin, to which the operating-pitman is attached, whereby the speed of the main shaft as applied to the wrist-pin and pitman is reduced, and whereby, also, all pounding and lost motion is prevented as the pitman-connection passes over the center and changes from a pushing to a pulling action. This object is accomplished by the fact that a plurality of the pinion-teeth are always engaged with the internal spur-gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating-rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear.

In the accompanying drawing, forming a part of this specification, and on which like reference-letters indicate corresponding parts, the figure represents a side elevation of my improved organization, with some of the parts in section, showing the same applied to any approved type of windmill structure.

The letter A designates a cast frame or structure carried by the upper part of the turn-table of a windmill, of which B refers to one of the bearing-blocks and C to an arm, to which is pivoted the pitman D. This pitman is triangular and of the type on the market in windmills manufactured by my assignees of this invention. To one extremity of this pitman is attached a pitman-bar E, the other

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end of which bar is fitted upon a wrist-pin F, carried by the internal gear G. This gear may be of any approved type, so long as it is provided with internal teeth. In the present case it is constructed with a disk H, having a hub I and rim J. It is mounted upon a stud or shaft K, carried by the bearing-block B.

On the main shaft L is placed an external-toothed pinion M It will be observed from the drawing that the pinion is within the circumference of the rim J and is intermeshed with the teeth of said rim. It will also be noticed that a plurality—three in the present instance—of the teeth of the pinion are engaged with the teeth of the gear-rim. This is due to the fact that the rim encircles the pinion. Thus it will be seen that when the main shaft is rotated with its pinion the internal gear-wheel G will also be rotated, though at a reduced speed, and as several of the teeth of the pinion are always engaged with the teeth of the rim no lost motion will occur as the wrist-pin passes the center, and the strains are changed from a pull to a push upon the pitman-bar E. The actuating-rod O connects with the pitman D in any approved manner at P, and extends down from the tower to the appliances to be operated—say a pump. The freedom of the organization from lost motion and sudden jerks as the wrist-pin passes over the center renders the operation of the pump smooth and regular. This increases the effectiveness of the pump and prevents undue wear and tear.

The invention is in practical operation and on the market in considerable numbers, and the facts here stated with regard to its operation are such as have been ascertained from commercial experience with it.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combidation, with a windmill-driving shaft and a pinion thereon, of an internal-toothed spur-wheel mounted adjacent to the said shaft and meshing with said pinion, a pitman connected with the spur-wheel, and an actuating-rod connected with the pitman.

2. The combination, with a windmill-driving shaft and a pinion mounted thereon, of an internal-toothed spur-wheel mounted adjacent to said shaft and meshing with said pinion, a pitman-bar connected to the spur-wheel, a pivoted pitman connected to the said bar, and an actuating rod connected to said pitman.

3. The combination, with the upper part of a windmill turntable, the main shaft mounted thereon, and a pitman pivoted thereto, an actuating-rod carried by the pitman, and a pinion mounted on said shaft, of a shaft or stud adjacent to the main shaft, an internal spur-gear mounted on said shaft or stud and having a wrist-pin, and a pitman-bar connected to the wrist-pin and to said pitman.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL W. MARTIN.

Witnesses:

WARREN HULL,
H. W. PLAISTED.

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The first claim of this patent is the only one that is now said to be infringed by the appellee. The infringing device may be described from Martin's drawings. Discard Martin's triangular pitman D, carry his pump-rod O to the left until it stands in the same vertical plane as the shaft K, straighten the pitman-bar E, swing its right end downward and pivot it directly to the pump-rod O, and we have the device used by the appellee. The defenses were that there was no novelty or utility in the combination of the appellant and that the appellee did not infringe it. In support of these defenses the mill company introduced in evidence letters patent No. 182,394, dated September 19, 1876, to Edward Williams, for a new and improved windmill which shows the pitman for driving the pump-rod actuated by two eccentric external-toothed gear-wheels, so that the wind-wheel will have an increased leverage and on the up-stroke of the pump rod will draw it slowly; while it will return it more quickly upon the down stroke. This was the only patent on a windmill offered as anticipating Martin's invention. A number of other letters patent were introduced from which it appears that internal-toothed gearing had been used, long before Martin made his invention, to drive pinions which actuated wood-saws, cutters of harvesting and mowing machines and like parts of similar machinery.

One witness testified that a windmill whose pump-rod was driven by an external-toothed pitman and an internal-toothed spur-gear was constructed and operated by the Spencer Manufacturing Company at Blue Springs, Nebraska, about November 1, 1889, but convincing evidence was produced by the appellant that Martin's first mill was constructed and sold as early as July, 1889.

SANBORN, J.; after stating the case as above, delivered the opinion of the court.

The court below dismissed the bill in this case on the ground that the statement contained in the letters patent upon which this suit is based, that "the invention is in practical operation and on the market in considerable numbers, and the facts here stated with regard to its operation are such as have been ascertained from commercial experience with it," proved that the appellant had abandoned the invention.

The acts of Congress provide that one who has invented and discovered a new and useful improvement "not in public use or on sale for more than two years prior to his application unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor." 16 Stat. ch. 230, § 24, p. 201, Revised Statutes, § 4886. The issue of the patent is, therefore, *prima facie* evidence that the invention it protects was not in public use or on sale for

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more than two years prior to the filing of the application on which it is based, and that it was not proved to be abandoned. The utmost effect of the recital in the patent which we have quoted could not carry it farther than to show that within two years prior to the application the improvements described in it had been used and sold. But the use and sale of the invention within two years before the application for the patent was filed was not sufficient to establish an abandonment of the invention, because the act of Congress expressly authorizes the issue of a patent, notwithstanding such use and sale. An abandonment may undoubtedly be proved within two years prior to the filing of the application, but it ought not to be presumed and it should be established by convincing evidence of the intention of the owner of the invention to dedicate it to the public. An abandonment is a dedication, and like any other dedication, it should be clearly proved. It rests upon the intension of the inventor. If he expressly declares, or by his acts clearly shows his intention to dedicate his invention to the public, a finding of abandonment would be warranted. But such a dedication should not be lightly presumed, because it surrenders a vested right of property as much as the dedication of land for a public park or a public road. The evidence in this case does not satisfy us that the appellant, or the inventor Martin, its assignor, ever had any intention to dedicate this improvement to the public. Under the acts of Congress, they were authorized to use and sell the iuvention for two years and to apply for and receive their patent, so that their failure to apply during that time was not inconsistent with an intention to preserve and protect their rights. There is no evidence in the record of a use or sale of the invention more than two years before the application was made; there is no evidence of an express declaration that the inventor or the appellant would not, or did not intend to apply for a patent for it, and there is no evidence of any acts inconsistent with such an intention. On the other hand, the application for the patent within two years after the invention was made was presumptive evidence of an intention not to dedicate it to the public, and the issue of the patent was *prima facie* proof that it had not been abandoned. Moreover, the defense of abandonment was not pleaded and the appellant had no opportunity to meet it by evidence. It was discovered by the court below at the final hearing, and it rested on the statement in the patent which we have quoted and on that alone. That statement was insufficient to support it. Mere forbearance to apply for a patent until one has perfected his invention and tested it by actual practice affords no just ground to presume its abandonment, nor will the use or sale of it within two years before the application is filed afford such ground, unless such use or sale is cccompanied by other acts or by declarations which clearly evidence an intention to dedicate the improvement to the

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public. *Agawam Compano* v. *Jordan*, 7 Wall. 583, 607; *Adams* v. *Jones*, 1 Fed. Cas. 126, 127, No. 57; *Babcock* v. *Degener*, 2 Fed. Cas. 293, 297, No. 698; *Jones* v. *Sewall*, 12 Fed. Cas. 1017, 1027, No. 7495; *M'Millin* v. *Barclay*, 16 Fed. Cas. 302, 306, No. 8902; *Pitts* v. *Edmonds*, 19 Fed. Cas. 751, 757, No. 11191.

In considering the merits of the case, the defenses of prior use and no utility may be dismissed without extended consideration. All the witnesses on both sides of the case testify that the combination of the internal-toothed spur-wheel with the pinion and the other usual machinery of a windmill and pump is more useful and more valuable than any other combination of elements in a windmill and pump yet discovered. The evidence of prior use is the testimony of a single witness, who was once in the employ of another infringer of the device of the appellant, but has since been employed by the appellee. He produces no part of the old windmill which he testifies was set up and put in operation before Martin filed his application, and his evidence is without the support of any patents or exhibits and without the support of the testimony of any other witness. The unsupported oral testimony which will warrant a finding of prior use should be clear and satisfactory. It is always open to suspicion. It ought to be sufficient to establish such a use beyond a reasonable doubt. The Barbed Wire Patent, 143 U. S. 275; *Deering* v. *Winona Harvester Works*, 155 U. S., 286, 300. The testimony for the appellee on this issue is not of this character, and it will be dismissed without farther comment.

But the appellee denies infringement. The essential element of the combination which the inventor sought to protect by the first claim of the patent in suit was the internal-toothed spur-wheel or spur-gear meshing with, and driving the pinion which actuated the pitman and pump-rod. Prior to this invention, all windmills had been driven by external-toothed spur-wheels. As the cogs on the spur-wheel and pinion and the other parts of the machinery wore away, the spur-wheel and the pinion drew apart, and as the pitman-connection passed over the center and the motion changed from a pulling to a pushing one or *vice versa*, a pounding and racking of the machinery arose which shortened its life and sometimes stripped the cogs from the pinion. The object of Martin's invention was to do away with this pounding and to prevent this wear and strain of the machinery. He accomplished this by throwing aside the external-toothed spur-gear and combining an internal-toothed spur-wheel with the pinion and the other necessary elements of the windmill, so that, as he says, "a plurality of the pinion-teeth are always engaged with the internal spur-gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating-rod, thereby prolonging the life of the machine by saving it from constant jarring and preventing wear and tear." The evidence is undisputed that this inven-

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tion completely accomplished its purpose. In the year 1893 or 1894, the appellee discarded the external-toothed spur-gear, with which it had previously driven its windmills, and substituted in its mills the internal-toothed spur-wheel described and claimed by Martin. The record discloses the fact that the president of the appellee had previously seen one of the mills of the appellant in operation and that he was advised to make this change by his pattern-maker, who had been in the employ of an infringer upon the appellant, against whom it had procured a decree, because the pattern-maker thought that the internal-toothed wheel was a good thing. The appellee seeks to escape from the inevitable conclusion to which these facts lead on the plea that it does not use the pitman-bar, the wrist-pin or the pivoted pitman described in the specification and in the second and third claims of Martin's patent. Its counsel invokes the principle that there can be no infringement of a combination, if any element of the combination is absent from the infringing device, and insists that the absence of the pivoted pitman and the pitman-bar is fatal to the appellant's claim of infringement. The answer is, that this invention consists essentially, as the inventor declares at the beginning of his specification, in the combination of the internal-toothed spur-gear with any suitable pinion, wind-shaft, wrist-pin, pitman and pump-rod of a windmill, and that he has broadly claimed this combination in the first claim of his patent. That claim is: "1. The combination, with a windmill-driving shaft and a pinion thereon, of an internal-toothed spur-wheel mounted adjacent to the said shaft and meshing with said pinion, a pitman connected with the spur-wheel, and an actuating-rod connected with the pitman." There is not an element in this combination which is not found in the windmill of the appellee, and it cannot be permitted to read other elements into this claim and then to defeat it, because it does not use the elements it interpolates. The pitman-bar and the pivoted pitman were omitted from this claim, we think, for the express purpose of securing the essential element of the invention in combination with any pinion, pitman and pump-rod that might be used. In our opinion the special office of the second and third claims was to secure combinations containing the pivoted pitman and the pitman rod described in the specification and omitted from the first claim, and the fact that these claims were added is a very persuasive argument that the additional elements they protect were not secured by the first claim. Any construction which would read into the first claim these additional elements renders it useless and unmeaning, because it gives it the same effect as the claims which follow it, and in this way shows that neither the patentee nor the patent office contemplated such an interpretation. The appellee has appropriated the essential feature of this invention, the internal-toothed spur-gear in combination with the pinion, pitman,

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wind-shaft and pump-rod of a windmill. The terms of the first claim of the patent are plain and unambiguous. They need no construction, and when taken in their ordinary signification, they fully describe and clearly claim the combination which the appellee is using. It ought not to escape here, because it does not use subordinate or unimportant elements of combinations described in other claims, which were undoubtedly omitted from this claim that the inventor might more perfectly secure the essential element of his invention. *Cohansey Glass Manufacturing Co.* v. *Wharton*, 28 Fed. Rep. 189, 190; *Tondeur* v. *Stewart*, 28 Fed. Rep. 561, 564; *Gould Coupler Co.* v. *Pratt*, 70 Fed. Rep. 622, 629.

Finally, the counsel for the appellee argue that there is no patentable novelty in the combination described in this claim, because internal-toothed spur-wheels were old and well known and the substitution of them for external-toothed spur-gear in the machinery of windmills was nothing but a double use. This argument is always plausible and persuasive where old elements have been combined to produce a new or better result. Each element taken by itself has its old effect, and it is always difficult to understand how it was that the practiced eyes of skilled mechanics did not at once see and apply the necessary remedy to the troublesome evil which the invention removes. The fact, however, that such an evil long existed and that no mechanic perceived or applied the remedy is the most conclusive evidence that something more than his eyes and skill was required to discover and apply the requisite device. It is true that internal-toathed spur-wheels, their effect and their relative advantages over external-toothed wheels had been familiar to mechanics time out of mind. They had been used on mowing machines and harvesting machines, on machines for sawing wood and doubtless upon hundreds of other machines, but no one had ever combined one of these internal-toothed wheels with the pinion, pitman and pump of a windmill until Martin made his invention in the year 1889. Windmills were old and their operation was familiar to mechanics, but until that year they went on pounding their wheels with every stroke of the pump-rod, wearing themselves out prematurely and occasionally stripping their pinions of cogs for the lack of the combination of this internal-toothed spur-wheel with the other essential elements of their machinery. If naught by the skill of the mechanic was required to make this improvement, it is passing stange that no mechanic ever made it until after Martin discovered and described it. In *Western Electric Co.* v. *LaRue*, 139 U. S. 601, the Supreme Court sustained a patent to one who took a torsional spring, such as had been used in clocks, doors and other articles of domestic furniture and applied it to telegraph instruments. In *Crane* v. *Price*, Webster's Pat. Cas. 409, the use of anthracite coal, where bituminous coal had previously been used, for smelting iron was held to be an

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invention, because it produced better iron at less expense. It is not infrequently a difficult and delicate task to determine whether or not the application of an old device to the production of a new or better result rises to the dignity of an invention. Mr. Justice Brown says in *Potts* v. *Creager*, 155 U. S. 597, 608, that the result of the authorities upon this subject is that "if the new use be so nearly analogous to the former one, that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use, but if the relations between them be remote, and especially if the use of the old device produce a new result, it may at least involve an exercise of the inventive faculty." The best evidence that the application of the internal-toothed spur-wheel to the new use of propelling the machinery of a windmill would not occur to a person of ordinary mechanical skill is that it did not occur to any of them in all the years in which windmills had been in use before Martin discovered and applied it. *Thomson* v. *Citizens' National Bank*, 10 U. S. App. 500. 512, 513, 3 C. C. A. 518, 522, 523, 53 Fed. Rep. 250, 255; *Loom Co.* v. *Higgins*, 105 U. S. 580, 591; *Consolidated Safety Valve Co.* v. *Crosby Steam-Gauge & Valve Co*, 113 U. S. 157, 179; *Magowan* v. *New York Belting and Packing Co.*, 141 U. S. 332, 341, 342; The Barbed Wire Patent, 143 U. S. 275, 281, 283.

Moreover, the combination of Martin immediately went into general use. More than three thousand windmills which contain his combination, have been manufactured and sold since 1890. All the witnesses testify to its advantages over the old combination which contained the external tooth-gear, and the fact that the appellee discarded the latter and substituted the former, demonstrates its utility and its advantages. Where the question of novelty is in doubt, the fact that the device has gone into general use, and has displaced other devices previously employed for a similar purpose, is sufficient to turn the scale in favor of the invention. *Potts* v. *Creager*, 155 U. S. 597, 609; *Smith* v. *Goodyear Dental Vulcanite Co.*, 93 U. S. 486; *Magowan* v. *New York Belting & Packing Co.*, 141 U. S. 332, 343.

The probative force of the patent, and of the facts to which we have adverted, constrain us to hold that the combination described in its first claim rose to the dignity of an invention and was properly secured by the patent. The decree below must be *reversed*, with costs, and the case must be remanded to the court below, with directions to enter a decree, to the effect that the first claim of the patent is valid and is infringed by the appellee; that the latter be enjoined from making, using or selling any machine containing the combination described in that claim, and that it account for the profits which it has derived from the manufacture and sale of any such machines, and it is so ordered.

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THAYER, J., dissenting.

I am not able to concur in that part of the foregoing opinion which deals with the question of patentable novelty. In my judgment, the combination covered by the first claim of Martin's patent, No. 433,531, is destitute of patentable novelty, unless the word "pitman," as used in that claim, is understood to include the triangular pitman mentioned in the specification, as well as the pitman "E," which is termed in the specification the "pitman-bar." If the claim is construed as covering both of these parts, which together operate as a pitman, it might be upheld, but in that event the defendant would not be guilty of infringement because he does not use the triangular pitman or any equivalent device. The majority of the court have construed the word "pitman" as meaniug simply the "pitman-bar," which is immediately attached to the spur-wheel, and as thus construed it admits of no doubt that the exact combination covered by the first claim is disclosed by a multitude of machines, such as mowers, reapers churns, machines for sawing wood, and others of a similar character. A pinion mounted on a shaft, the teeth of which engage with the teeth of a spur, or drive-wheel for the purpose of communicating a reciprocating motion to a pitman, or *vice versa*, of communicating motion to a revolving shaft, is one of the oldest mechanical devices, which has been in use time out of mind, and judging by the state state of the art when the Martin patent was granted, it was sometimes a matter of choice whether the teeth of both wheels were set on the exterior surface of the rims of the wheels, forming an exterior gearing, or whether the teeth of one wheel were set on the exterior surface, and the teeth of the other wheel on the interior surface of the rim, so as to form what is termed an interior gearing. Very frequently it was necessary to adopt the latter mode of construction to render the machine more compact, or to accomplish some other special object. In view of the state of the art, as illustrated by the various kinds of machines above mentioned, it is manifest that the advantages to be gained by either method of engagement were well understood, and that if called upon to construct a machine for a given purpose, an experienced mechanic would have had no difficulty in deciding which form of gearing was preferable. In my judgment, the majority of the court attach undue importance to the fact that Martin was the first to employ the interior gearing in constructing a windmill. I also think that they exaggerate the defects in that class of windmills which are constructed with an exterior gearing. It may be that a windmill constructed according to Martin's patent makes a little less noise than a windmill which employs the exterior gearing, and possibly the wear on the cogs is somewhat less, but the old-fashioned windmill had proved to be very serviceable, and the defects therein were not so serious as to

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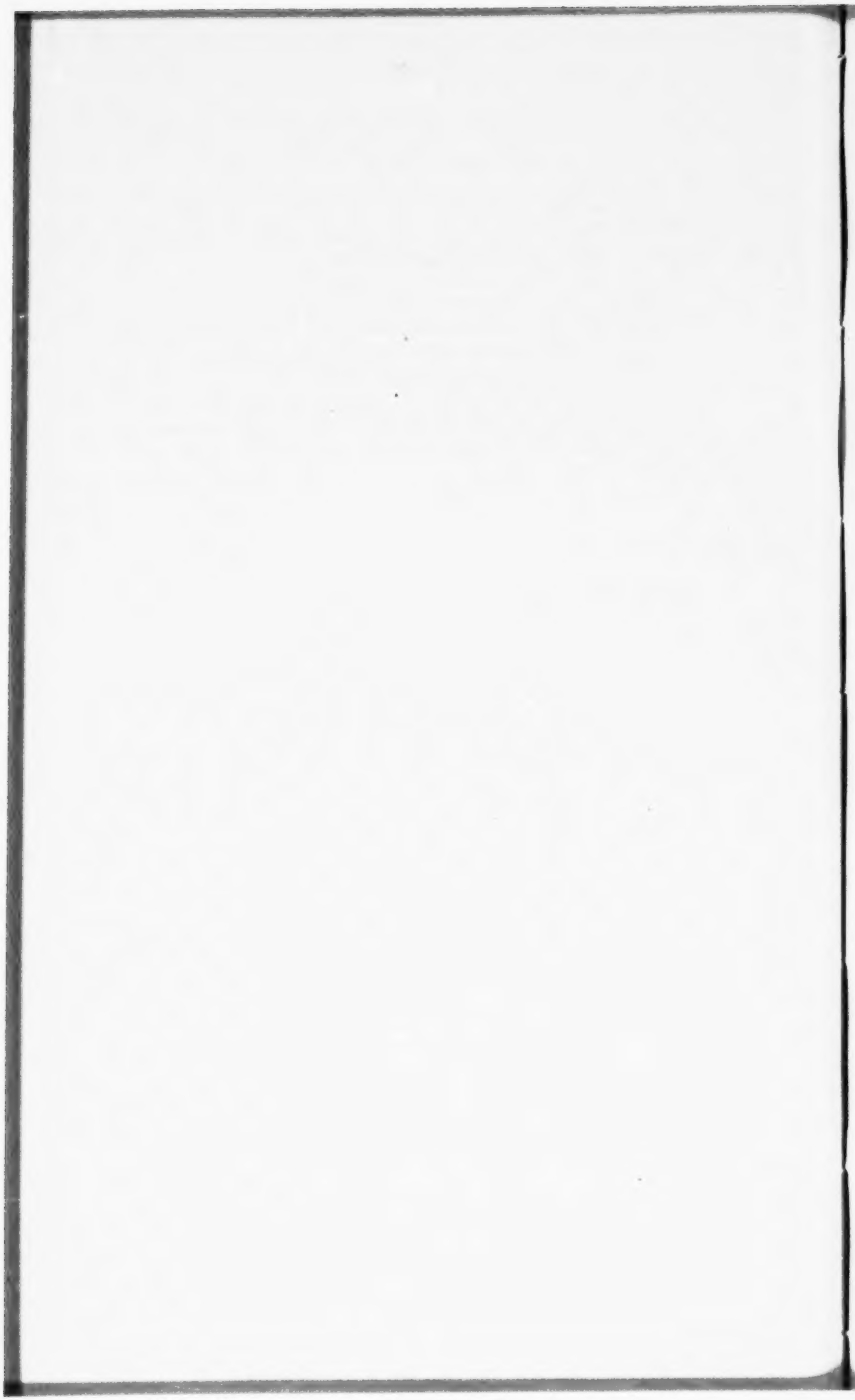
require an exercise of the inventive faculty to overcome them. Martin simply applied to a windmill a method of gearing which was well known, and had been employed for many years in constructing other machines, and by so doing he displayed no more than ordinary mechanical skill. The new use to which he applied the interior gearing was clearly analogous to the use to which it had been applied in other machines, notably in churns, mowing machines and reapers. Nor were the results which he attained by the application of the old device to windmills so highly beneficial, as to justify the inference that the faculty of invention was involved in conceiving the new use. In my judgment, the patent laws ought not to be so construed as to give to the complainant a monopoly of an old and well-known mechanical combination in the construction of windmills. The decree below being for the right party, I think it should be affirmed.

Filed August 2, 1897.

A true copy.

Attest :

Clerk U. S. Circuit Court of Appeals, Eighth Circuit.



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MAST, FOOS & CO.
vs.
STOVER MFG. CO.

(CIRCUIT COURT, N. D. ILLINOIS, N. D. JANUARY 31, 1897.)

Suit by Mast, Foos & Co against the Stover Manufacturing Company to restrain the alleged infringement of letters patent No. 433,531, issued August 5, 1890, to S. W. Martin, for a windmill.

Lysander Hill and H. A. Toulmin, for complainant.

Offield, Towle & Linthicum, for defendant.

GROSSCUP, District Judge. Motion for injunction to restrain infringement of letters patent No. 433,531, relating to a new and useful improvement in windmills. The patent was before the United States Circuit Court of Appeals for the Eighth Circuit, where its validity was upheld, and a device almost precisely like that of the defendant in this case was held to be an infringement. Mast, Foos & Co. v. Dempster Mill Mfg Co., 82 Fed. 327. The majority of the Court held that the invention consists in the combination of an internal-toothed spur-gear with any suitable pinion, wind shaft, wrist pin, pitman, and pump rod of a windmill. Within the ruling in that case relating to the scope of the patent, the device of the defendant in the case under consideration is clearly an infringement.

The only question left is whether this Court shall follow the judgment of the Circuit Court of Appeals both with respect to the validity of the patent and its scope.

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The rule laid down by the Circuit Court of Appeals for the Seventh Circuit (Electric Mfg. Co. v. Edison Electric Light Co., 18 U. S. App. 641, 10 C. C. A. 106, and 61 Fed. 834) is as follows:

> "That where the validity of a patent has been sustained by prior adjudication, upon final hearing, and after bona fide and strenuous contest, the matter of its validity upon a motion for a preliminary injunction is no longer at large, all defenses, except that of infringement, being reserved to the final hearing, subject, however, to the single exception that, where a new defense is interposed, the evidence to support it must be so cogent and persuasive as to impress the Court with the conviction that, if it had been presented and considered in the former case, it would probably have availed to a contrary conclusion."

Under this rule, the preliminary injunction should unquestionably go, unless the new evidence is so cogent and persuasive as to impress the Court with the conviction that, if it had been presented and considered in the former case, the decision there would have been other than it was.

In the case before the Court of Appeals for the Eighth Circuit it was clearly shown that windmills having the precise combination of the complainant's patent, except that the driving gear was external instead of internal, had been long in prior use. The single advance said to have been made in the art by the Martin patent was the substitution of the internal for the external gear. In this lies the gist of his invention, if any invention there be. It was also shown in that cause that internal gear wheels had been long in previous use to drive analogous machines, such as machines for mowing, for sawing wood, and for other purposes. But the Court held that the adaptation or transference from these other uses evinced sufficient

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inventiveness to make it patentable. There was in that case an attempt to prove a prior use of the internal gear in windmills, but such fact was not established to the satisfaction of the Court. In the case before that Court, therefore, Martin was shown to have been the first man to use an internal gear to drive windmills.

Without questioning the soundness of the Court's judgment upon the question of whether patentable invention was shown, I can on this motion only inquire whether, in all probability, that judgment would have been changed had credible new evidence—such as is before me—been before the Court of Appeals. That evidence goes to two points: (1) That the internal gear feature of the Martin patent was anticipated in previous patents; (2) that it was anticipated by prior use.

I have looked carefully through all previous patents brought specifically to my attention as not having been in the case in the Eighth Circuit, and am convinced that the internal gear shown in each of them had no function relating to the driving of the shaft or the creation of reciprocal action. The function of the internal gear appliance, in nearly all these cases, was merely to keep the wheel in the wind. I do not feel that the presence of this information in the mind of the Court of Appeals would have changed its judgment respecting the validity of the patent.

The device principally relied upon to show prior use is that of the Perkins mill, manufactured at Mishawaka, Ind. It is not disputed that this mill, in fact, antedates the Martin device; the inquiry simply is whether it, in the sense of patent law, anticipates the Martin device. The Martin device is described by the inventor as follows:

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"The invention consists, essentially, of an improved back-gear organization, involving an external toothed pinion and an internal toothed spur gear, the pinion being mounted on the wheel shaft, and the gear having formed on or connected with the wrist pin to which the operating pitman is attached, whereby the speed of the main shaft as applied to the wrist pin and pitman is reduced, and whereby, also, all the pounding and lost motion is prevented as the pitman connection passes over the center, and changes from a pushing to a pulling action. This object is accomplished by the fact that a plurality of the pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod, thereby prolonging the life of the machine by saving it from constant jarring, and preventing wear and tear.

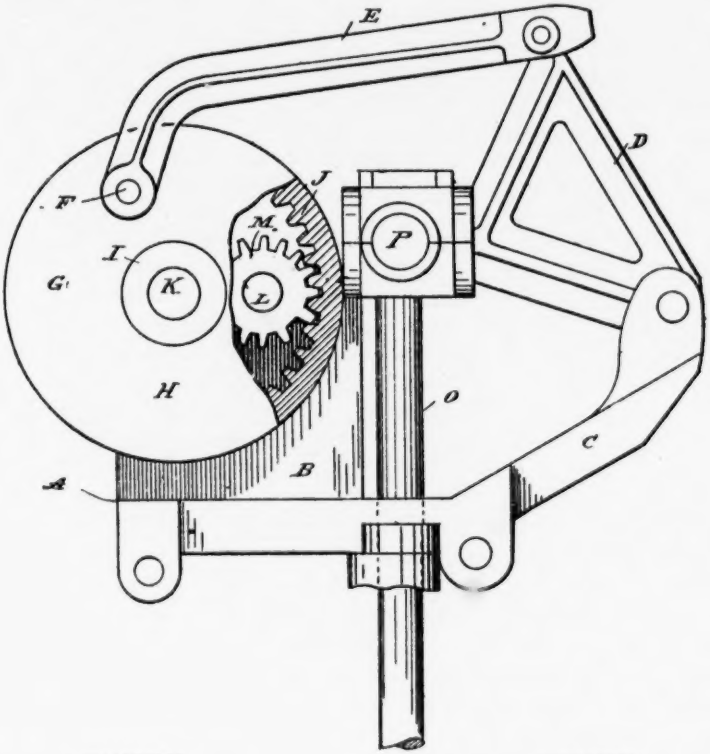
"In the accompanying drawing, forming a part of this specification, and on which like reference letters indicate corresponding parts, the figure represents a side elevation of my improved organization, with some of the parts in section, showing the same applied to any approved type of windmill structure.

"The letter A designates a cast frame or structure carried by the upper part of the turntable of the windmill, of which B refers to one of the bearing blocks, and C to an arm to which is pivoted to the pitman, D. This pitman is triangular, and of the type on the market in windmills manufactured by my assignees of this invention. To one extremity of this pitman is attached a pitman bar, E, the other end of which bar is fitted upon a wrist pin, F, carried by the internal gear, G. This gear may be of any approved type, so long as it is provided with internal teeth. In the present case it is constructed with a disk, H, having a hub, I, and a rim, J. It is mounted upon a stud or shaft, K, carried by the bearing block, B.

"(No Model.) S.W. Martin.

"Win lmill.

"No. 433,531. Patented Aug. 5, 1890.



WITNESSES

H. M. Pluistid

Warren Shell,

INVENTOR

Samuel W Martin.

By H. A. Toulmin

Hes Attorney

"On the main shaft, L, is placed an external toothed pinion, M. It will be observed from the drawing that the pinion is within the circumference, J, and is intermeshed with the teeth of said rim. It will also be noticed that a plurality (three in the present instance) of the teeth of the pinion are engaged with the teeth of the gear rim. This is due to the fact that the rim encircles the pinion. Thus, it will be seen that, when the main shaft is rotated with its pinion, the internal gear wheel, G, will also be rotated, though at a reduced speed; and, as several of the teeth of the pinion are always engaged with the teeth of the rim, no lost motion will occur, as the wrist passes the center, and the strains are changed from a pull to a push upon the pitman bar, E. The actuating rod, O, connects with the pitman, D, in any approved manner, at P, and extends down from the tower to any appliance to be operated; say, a pump. The freedom of the organization from lost motion and sudden jerks as the wrist pin passes over the center renders the operation of the pump smooth and regular. This increases the effectiveness of the pump, and prevents undue wear and tear."

The claims are as follows:

(1) "The combination with a windmill driving shaft and a pinion thereon, of an internal toothed spur wheel, mounted adjacent to the said shaft, and meshing with said pinion, a pitman connected with the spur wheel, and actuating rod connected with the pitman."

(2) "The combination with a wind-driving shaft and a pinion mounted thereon, of an internal toothed spur wheel, mounted adjacent to said shaft, and meshing with said pinion, a pitman bar connected to the spur wheel, a pivoted pitman connected to said bar, and an actuating rod connected to said pitman."

(3) "The combination with the upper part of the windmill turntable, the main shaft mounted thereon, and a pitman pivoted thereto, and actuating rod carried by the pitman, and a pinion mounted on said

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shaft or stud, adjacent to the main shaft, an internal spur gear mounted on said shaft or stud, and having a wrist pin, and a pitman bar connected to the wrist pin and said pitman."

The large toothed wheel, to which motion is imparted by the small wheel connecting with the fan, carries with it the pitman bar, E, thus, by the backward and forward motion imparted, communicating action to the pump. It is apparent that, at the moments when the wrist pin, F, passes directly over and under the axis, K, the pitman action changes from a pushing to a pulling, or from a pulling to a pushing, action, thereby immediately changing the direction of the strain upon the axis wheel. Were the wheel an external gear, intermeshing with the pinion, M, this change of strain would have alternately the tendencies to tighten and then widen the interlacings of the cogs. This, I infer, is what the Court of Appeals referred to, in the following sentence, respecting the external wheel windmill :

> "As the cogs on the spur wheel and pinion and the other parts of the machinery wore away, the spur wheel and the pinion drew apart; and as the pitman connection passed over the center, and the motion changed from a pulling to a pushing one, or vice versa, a pounding and racking of the machinery arose, which shortened its life, and sometimes stripped the cogs from the pinion."

Martin's internal cog wheel obviated this trouble, inseperable to the combination of wheel and pitman, by the fact, as stated in his patent :

> "A plurality of pinion teeth are always engaged with the internal spur gear, resulting in giving a perfectly uniform and smooth and noiseless reciprocating motion to the actuating rod."

Whether the mechanical results pointed out in the patent, and approved by the opinion of the Court of

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Appeals are, in fact, justified, is no part of my inquiry. I must accept the judgment of that Court as to that fact.

In the Perkins mill the fan is attached to, and turns, the large wheel, into the internal cogs of which the cogs of the small wheel attached to the end of a wrist shaft, on the other end of which is a larger cog wheel, which, by external gear, meshes with a small wheel on the top end of a vertical shaft. It will be observed that the motion imparted is necessarily constant, and that the strain on the axis of the several wheels is at all times uniform. There is no period in the revolution of the wheel when the strain on the axis of either wheel changes directions, and no moment of lost motion. The absence of the pitman bar attached towards the outer rim of the wheel, as in the Martin device, eliminates all changes arising from pushing to pulling action, and vice versa. There is in the Perkins device, therefore, whether it is run by external or internal gear, no danger of pounding or lost motion. In the case of either gear the motion would be constant and noiseless. The Perkins device is, in this respect, similar to the internal gears used in mowing and harvesting machines, spoken of by the Court of Appeals. It is in no sense, either technically or substantially, a combination of internal toothed wheels with the pinion, pitman, or pump of a windmill, and therefore could no more have suggested either the purpose or the result of the Martin device. I am not convinced that the presence of the Perkins device in the case before the Circuit Court of Appeals would have changed its judgment. On the contrary, I feel sure that that Court, holding to its other postulates, would have classed the Perkins device with the others referred to, as being no such sufficient anticipation of the thought embodied in the Martin invention as to invalidate its patentability. The motion for an injunction must therefore be sustained.

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IN THE

UNITED STATES CIRCUIT COURT OF APPEALS

FOR THE SEVENTH CIRCUIT.

No. 486.—MAY SESSION, A. D. 1898.

STOVER MANUFACTURING COMPANY,
vs.
MAST, FOOS AND COMPANY.

Appeal from the Circuit Court of the United States for Northern District of Illinois, Northern Division.

Before WOODS and SHOWALTER, *Circuit Judges*, and BUNN, *District Judge*.

This appeal is from an interlocutory order of injunction against infringement of the first claim of letters patent No. 433,531, granted on August 5, 1890 to Samuel W. Martin for improvement in windmills. The claim and a reduced form of the drawing of the patent are as follows:

"The combination with a windmill driving shaft and a pinion "thereon, of an internal toothed spur wheel mounted adjacent to "the said shaft and meshing with said pinion, a pitman connected "with this spur-wheel and an actuating rod connected with the "pitman."

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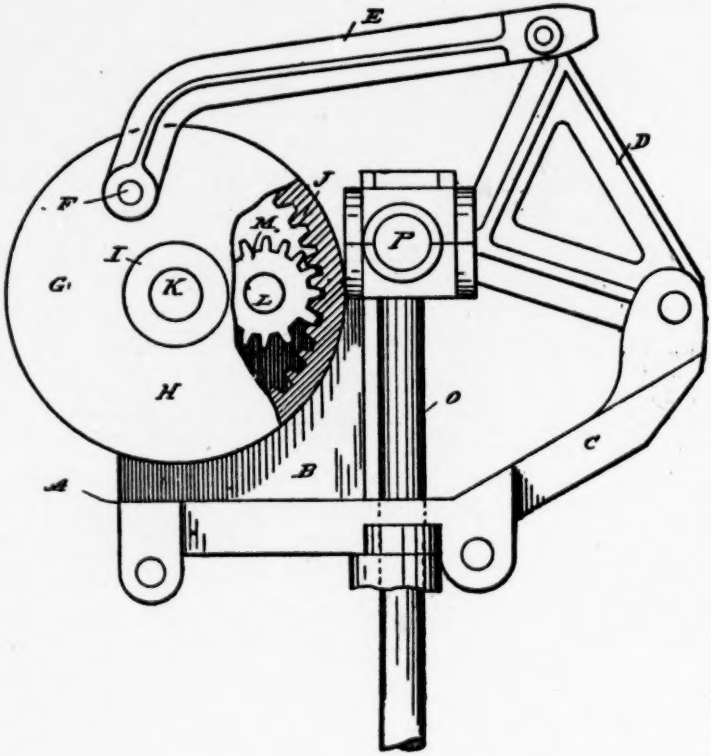
MARTIN PATENT.



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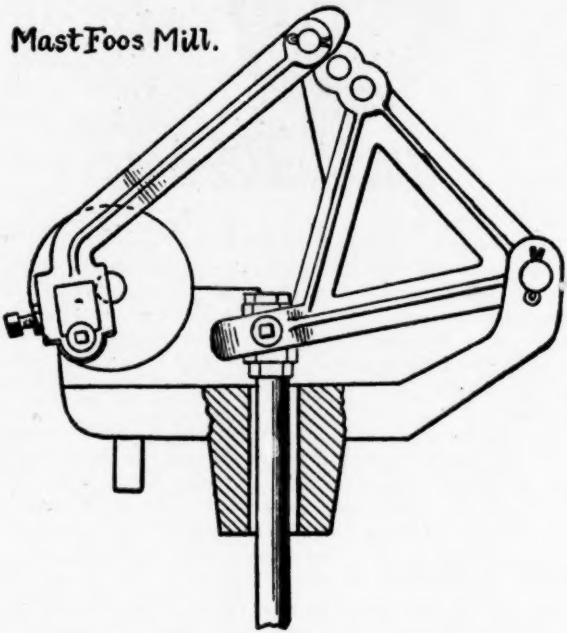
As illustrative of the different types of windmills and of the development of the art, the appellant put in evidence the following letters patent issued at various dates prior to and on November 2, 1880: No. 182,394 to E. Williams, No. 189,132 to D. Nysewander, No. 207,189 to Samuel W. Martin; No. 233,134 to G. M. Beard; No. 233,928 to G. C. Harris; and also a sketch here reproduced of a windmill made by Mast, Foos & Co., referred to in the patent in suit:



To show the prior use of internal gear wheels in windmills the following letters patent were put in evidence, the last bearing date October 29, 1889: No. 2,215 to Perry Davis; No. 254,527 to G. H. Andrew; No. 267,440 to M. R. Martin; No. 271,635 to W. H. & C. A. Holcombe; No. 273,226 to P. T. Coffield; No. 283,109 to W. H. & C. A. Holcombe; No. 317,731 to Colman & Turner; No. 320,182 to D. & W. W. Shilling; No. 321,750 to G. H. Pattison; No. 346,674 to H. G. Newell; No. 414,113 to J. T. Hostler; and also a sketch of the Perkins windmill which was in use before the date of Martin's conception, the relevant parts of which are shown in the following drawing:

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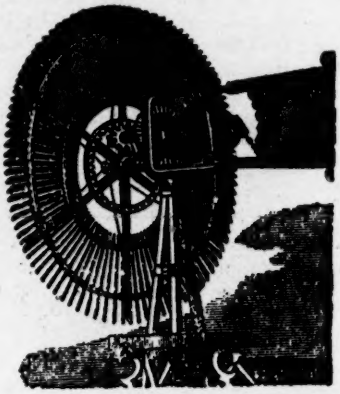

Other proof was offered of the use of internal gear wheels in the mechanic arts generally, including Schenk's patent No. 380,697 for a mechanical movement, the Berrigan patent No 273,705 for improvement in lawnmowers, the Hall & Town patent No. 97,393, for a sawing machine, the Wilson patent No. 232,384, for a treadmill, and from the book entitled "507 Mechanical movements," published in 1871, cut 34 and the following description thereof:

"An internally toothed spur-gear and pinion. With ordinary "gears the direction of rotation is opposite; but with the internally "toothed gear the two rotate in the same direction, and with the "same strength of tooth the gears are capable of transmitting "greater force, because more teeth are engaged."

WOODS, *Circuit Judge*, after making the foregoing statement, delivered the opinion of the court:

It is objected at the threshhold that this court is not at liberty on this appeal to inquire into the validity of the first claim of the Martin patent, because, before the hearing was had in the court below, the validity of that claim had been determined by the United States Circuit Court of Appeals for the Eighth Circuit in the case, which will here be called the Dempster case, of *Mast, Foos & Co.* v. *Dempster Mill Mfg. Co.*, 49 U. S. App., 508, 27 C. C. A., 191. The court below, in obedience to the opinion of this court in *Electric Mfg. Co.* v *Edison Electric Light Co.*, 18 U. S. App., 641, 10 C. C. A. 106, deemed itself bound to follow the earlier decision, and now it is insisted that this court must affirm the order entered without inquiry into the question of the patentable novelty of the claim or into any question decided by the court in the Eighth Circuit.

The decisions touching the practice on appeals from interlocutory orders under the judiciary act of 1891 have not been in entire harmony, but in the recent case of *Smith* v. *Vulcan Iron Works*, 165 U. S. 518, where the decisions touching the subject are collected, the Supreme Court has defined clearly the scope of the review which the act was intended to authorize. After declaring that the appeal, which by section 7 of the act may be taken from an "interlocutory order or decree granting or continuing such "injunction", is an appeal from the whole of such interlocutory "order or decree, and not from that part of it only which grants or "continues an injunction," the court proceeds to say that the manifest intention of the provision was "not only to permit the "defendant to obtain immediate relief from an injunction, the "continuance of which throughout the progress of the cause might "seriously affect his interest; but also to save both parties from the "expense of further ligitation, should the appellate court be of "opinion that the plaintiff was not entitled to an injunction "because his bill had no equity to support it " The comprehensive terms of this expression forbid the suggestion that it does not apply when the appeal is from an order made upon affidavits, and not from a decree ordering both an injunction and an accounting, entered as the result of a hearing upon full proofs. If there is ground for a distinction in that respect it is in favor of the appeal from a preliminary order made upon ex parte and imperfect showings at the commencement of litigation, rather than an appeal from an injunction perpetual in terms granted after a full hearing, which is called interlocutory only because there remains to be taken an accounting, upon which the evidence adduced cannot ordinarily affect the injunction. This being the scope of the appeal, the logical interference would seem to be that every application to a circuit court for an injunction or temporary restraining order should be considered on its merits, and that a ruling or opinion of another court upon any question involved should be given only its just and reasonable weight according to the circumstances The statute gives the right of appeal, the Supreme Court has determined that the review, so far as may be, shall extend to the merits, and it is not consistent to say that the decision of an inferior court must be pronounced on one basis and reviewed on another.

In respect to the merits: It was stated in the opinion of the court in the Dempster case, and we think correctly, that "the essential element" of the first claim of the patent was "the internal "toothed spur-wheel or spur-gear meshing with and driving the "pinion which actuated the pitman and pump-rod;" and at the same time it was conceded to be "true that internal toothed spur-"wheels, their effect and their relative advantages over external "toothed wheels had been familiar to mechanics time out of

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"mind." In view of that concession and of the obvious cogency of the dissenting opinion of Judge Thayer it is to be inferred that the court could not have found in the patent the novelty essential to invention but for the presence of features of evidence not apparent in this record. For instance, in that case only one patent on windmills No. 182,394 granted on September 19, 1876, to Edward Williams, was offered as anticipating Martin's, and that showed a pitman actuated by two eccentric external toothed gear-wheels. Accordingly the court, after rejecting as unsatisfactory the testimony of the one witness by whom it was attempted to show prior use, dismissed from further consideration the defenses of prior use and non-utility, and in considering the question of infringement declared, upon the proof before it, that prior to Martin's invention, "all windmills had been driven by external toothed spur-wheels," that in the mills so constructed, as the cogs and other parts wore away, a pounding and racking of the machinery was caused "as the pitman connection passed over the center and the motion changed from a pulling to a pushing one, and vice versa, shortening the life of the mill and sometimes stripping the cogs from the pinion;" and, after quoting from the specification the statement that "a plurality of the pinion teeth are "always engaged with the internal spur-gear, resulting in giving a "perfectly uniform and smooth and noiseless reciprocating motion "to the actuating rod, thereby prolonging the life of the machine "by saving it from constant jarring and preventing wear and "tear," the court added: "The evidence is undisputed that this invention completely accomplished its purpose." Certainly a remarkable success, as stated, and well worthy of a patent. But the proof in the present record shows no such merit. In that case the record also disclosed and the court laid stress upon the fact that the president of the infringing company, before abandoning the external and adopting the internal gearing, had seen one of the mills made under the Martin patent in operation, and had appropriated that form of construction on the advice of his pattern maker who had been in the employ of an earlier infringer. "The inevitable conclusion to which these facts lead," the court declared, "could not be escaped by asking that the broad terms of the first claim be confined to the meaning of the restricted terms of the other claims;" and the contention that the substitution of internal for external gearing in a windmill, in view of the common use of both forms of gearing in other machines in familiar use was not invention, the court answered by declaring it passing strange, if naught but the skill of the mechanic was required to make the improvement, "that no mechanic ever made it until after Martin discovered and described it." "Moreover," the court added, "the combination of Martin immediately went into general use. More than three thousand windmills which contain his

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combination have been manufactured and sold since 1890." That opinion was handed down on August 2, 1897, and the suggestion is obvious that the sale of the number of mills stated in a period of more than seven years was not phenominally large for a strong and energetic establishment. The proof in this case shows that the prior form of construction was by no means superseded by the new, which, according to the evidence here presented, constitutes not more than fifteen per cent of the total output on the market. It is evident too that the supposed defects of the external gearing had been exaggerated; that their tendency to friction and to wear and tear, if constructed with adequate strength and properly adjusted, is not essentially different from that of the other form, and if cogs have ever been stripped off it was due to faulty construction or maladjustment. This seems to us to be the reasonable view of that phase of the question; and instead of it being true here, as in the Dempster case, that the alleged infringer appropriated Martin's construction after seeing it in operation, the testimony of the president of the Stover company is that the adoption by that company of the internal gear for operating the actuating rod of its windmill was a mere accident or incident of construction in the first instance, without any knowledge of the Martin patent or mechanism, and was accomplished simply by transferring the internal gear from other machines made by the company side by side with its windmills, such as power feed mills driven by horse power. No reason is shown to discredit this testimony, and it follows that if Martin made an invention, the appellant is entitled to the credit of making the same discovery. The more reasonable conclusion is, as it seems to us, that neither can be credited with the exercise of more than ordinary mechanical skill. . That the internal gearing employed to actuate the pitman of a windmill has some advantages, and therefore may be properly called an improvement over external gearings, there can be no doubt, but in a windmill the advantages are not different in kind from what they are in other machines which have a dead point, the passing of which involves a constant change from pulling to pushing and vice versa in the application of the operative force. The advantages are the same "relative advantages" which, it is conceded, had been familiar to mechanics time out of mind. That the improvement was not incorporated in windmills sooner on the proof here made is not strange. It is shown, and without proof would be inferred, that it is a matter of expense and inconvenience to remodel and recast any part of a machine, though in itself trivial, and upon this ground as well as by reason of that inertia which disposes manufacturers to let well enough alone a manifestly desirable change in the structure of a machine, already in successful use, will go unmade until forced in order to meet the competition of a new or more enterprising rival. The first to

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make such an improvement is not in fact an inventor, and to infe invention because it had not been produced sooner would be to reach a false conclusion by an argument neither persuasive nor plausible. *See Pardin & Orendorff Co.* v. *Moline Plow Co.* (*this court, this session.*)

Other considerations aside, the proof of the prior art in this record is different from and far more extensive than it was in the Dempster case. Besides the Williams patent a number of patents are in evidence showing windmills with both external and internal gearings. The fact was pointed out and deemed material by the court below that the internal gear shown in each of the patents in evidence "had no function relating to the driving of the shaft, or the creation of reciprocal action," the function in nearly all the cases being, it was said, "merely to keep the wheel in the wind." In the Eighth Circuit, the court, accepting it as true that prior to Martin's invention all windmills had been driven by external gearings, held that, though the like use of such gearings in other machines had long been familiar, the adaptation or transfer thereof to the windmill evinced invention; and the court below, on proof that such gearing had been in common use in windmills, but not in immediate connection with the driving shaft or to produce reciprocating motion, was constrained, as already explained, to hold that the difference between the cases was not such as to justify a different conclusion. It may be that the presence of the internal gearing in other parts of a windmill ought to be regarded as of little or no more significance in respect to the particular combination covered by Martin's claim than such gearing in familiar use in machines used for sawing wood, mowing and other purposes, especially since in some of the latter the use was to produce reciprocating motion; but in view of the fact that in the windmill of Perkins and in numerous others, on which patents had been granted before the date of Martin's application, external and internal gearings were in common use side by side, we find it impossible to credit with invention a patentee who did nothing but put one of the forms in the place of the other in a machine where both were already present, producing by the change no new result but only improved effects or relative advantages long known to mechanics to be the result of using that form instead of the other. Such an exchange or substitution of one of two forms of gearing for another in a machine, where both are in familiar use side by side, is no more to be called invention than would be the substitution under like circumstances of one familiar make of pulley for another.

The customary reference has been made to such cases as *Crane* v. *Price*, Webster's Pat. Cas., 393,409, *Western Electric Co.* v. *La Rue*, 139 U. S., 601, and *Potts* v. *Creager*, 155 U. S. 597, but the distinction is clear. In *Crane* v. *Price* the discovery was of the

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susceptibility of anthracite to the action of the hot blast: 1 Robinson on Patents, sec. 266, *n*. Martin discovered no new quality in internal gear-wheels, and applied them to no use which can be properly called new. In *Western Electric Co.* v. *La Rue* the invention related to telegraphic keys and consisted "in substituting for the trunnions or pivots upon which the lever vibrates a torsional spring or strip of metal"—the spring not only taking the place of the pivots or trunnions, but when used in connection with certain adjusting screws taking the place of the ordinary retractile spring. The court, after stating that there was nothing in the exhibits in the case to show "the use of a torsional spring in a telegraphic instrument" and that the invention "did not seem to be one of great importance," said: "We think the adaptation of this somewhat unfamiliar spring to this new use, and its consequent simplification of mechanism, justly entitles the patentee to the rights of an inventor." There was there not simply the substitution of one known form of spring for another. The retractile spring was displaced by the torsional spring, and if there had been nothing more it would have been essentially like the putting of the internal gear-wheel in the place of the external; but the replacement of a fixed and inflexible pivot or trunnion with a torsional spring was an essentially different achievement, rising, as the Supreme Court considered, to the dignity of invention. But that conclusion, it is to be observed, was reached on the grounds that the torsional spring was somewhat unfamiliar, had never before been employed in a telegraphic instrument, and as introduced subserved a new use. Here, the contrary is true in every particular. The internal gearing, its effect, and its relative advantages over the other form had been familiar; it had been in use in windmills side by side with the external wheel, and if as employed in the Martin combination it served a use which in any sense was new, it was in the language of the opinion in *Potts* v. *Creager*, "so nearly analagous to the former one that the applicability of the device to its new use would occur to a person of ordinary mechanical skill."

It is not perceived that further proofs are possible of a character to change the result. The decree or order below is therefore reversed, with directions to dismiss the bill for want of equity.

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